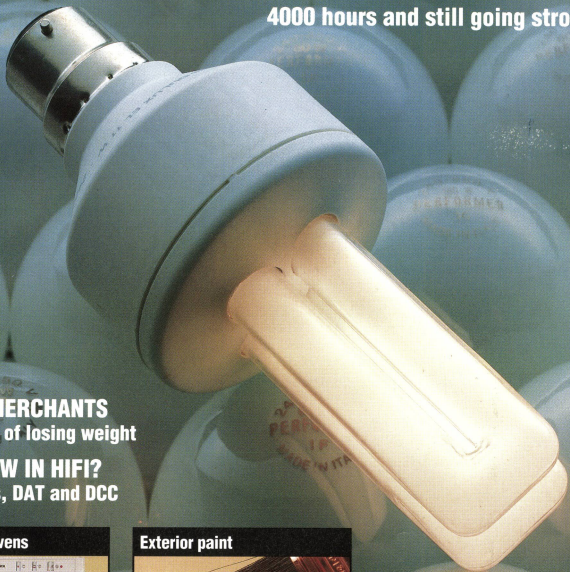


CHOICE

LONG-LIFE LIGHT: THE TEST OF TIME

4000 hours and still going strong



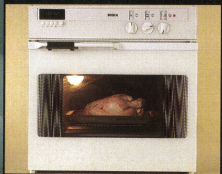
THE DIET MERCHANTS

The business of losing weight

WHAT'S NEW IN HIFI?

Digital, discs, DAT and DCC

Electric wall ovens



Exterior paint



CHOICE

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All products tested for CHOICE are bought randomly in the marketplace and no samples are accepted. Evaluations are based on tests, trials and expert judgments as appropriate. These findings should not be applied to models other than those nominated in CHOICE. We do not necessarily evaluate every available product or service in a particular class. We check the results of our tests just before publication with manufacturers, but specifications and quality may vary. If this issue is no longer current check with us or the manufacturer to determine if important changes have taken place before you buy. If, despite our extensive checking, a mistake slips through we will publish a correction as soon as possible.

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Editorial

THREE HUNDRED thousand Australians purchase a weight loss program each year, making it an industry worth an estimated \$500 million per annum to its operators. The sheer size of the industry — plus an almost complete lack of regulation — made us think it was time we took another look at how consumers fare when they turn to commercial weight loss programs.

You'll find the full answer starting on page 6, but in essence we were disappointed: out of the six major companies we looked at, we can recommend only one. The rest fell down in terms of confusing systems of costs, consumer-unfriendly contracts, hard-sell tactics or just plain boring food. We'd like to see some regulation in the industry, but that'll take time. In the meantime we give you a list of questions to ask of any weight loss program you might consider joining — just one wrong answer should be enough to make you think twice about parting with your money.

Another surprise — again not so pleasant — in this issue was the first results of our new paint test. We examined the paints after only a year's weathering and found over 40 of them had cracked, peeled or become impregnated with dirt to an unacceptable extent. You'd be pretty annoyed if the same thing happened to your house!

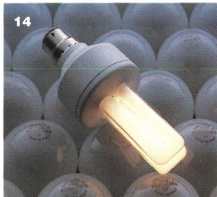
Long-life light bulbs told a similar story: half the brands we tested had a significant number of bulbs which didn't make it to 4000 hours — approximately the point at which it becomes worth your while financially to make the switch to these energy-saving bulbs. Fortunately 100% of some brands lasted the distance, so your choice should be fairly easy.

We don't like finding disappointing products and services like these — if all manufacturers and service providers did their job well CHOICE might be out of business but consumers would have a better deal! In the meantime we'll keep our reports coming so you know how to pick the best.

Jane Mackenzie
Editor



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Cover photo: Kent Mears

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Next issue

Supermarket survey, hybrid bikes, fresh pasta, car batteries, hiring tradespeople, glues, investing in property.

August, September, October

Tests: Water heaters, mains drills, are low-tar cigarettes really low-tar?, washing machines, highchairs, portable drinks coolers, disposable nappies, vacuum cleaners.

Features: Mattresses, servicing small appliances, antibiotics, vitamins and minerals, alternative energies, life insurance, security screen doors, low-energy house design, health care, house and contents insurance, buying a second-hand car.

Features

6 The diet merchants

Like the statue in every block of stone, weight loss programs promise to find the thin person in every fat one. Do they fulfil this promise, and what does it cost you?

27 Grains and cereals

In Australia we regularly eat grains in the form of bread, breakfast cereals and pasta, but apart from rice we rarely use simple cooked grains. We take you on a tour of some of these nutritious and versatile foods.

30 The selling game

In the food industry, the consumer isn't the only person who pays up at the till — supermarkets don't just sell food to consumers, they also 'sell' shelf space to their suppliers. We look at some of these supermarket charges, and at their effect on consumers.

Tests

14 Long-life light bulbs

They're claimed to last 8000 hours — eight times the life of a normal incandescent bulb. While they cost less to run, they're much more expensive to buy. You break even around 4000 hours, so we're bringing you the results of our tests at this stage of their life — and find you might not have got your money's worth out of some brands.

18 Digital recording

DAT, DCC and MiniDisc — three new systems promise recordings with CD digital quality. But before you rush out and buy, read this appraisal of the pros and cons of each system.

33 Exterior paint for timber

After the first year of our new paint test, some paints have already fallen by the wayside — they've cracked, peeled, or became impregnated with dirt.

41 Electric multi-function wall ovens

'Multi-function' ovens are said to be the way of the future — they let you choose to cook with or without a fan, with a top or bottom element (or both), offering versatility and convenience. Since most of them also cost well over \$1000, you'd want to make sure you're buying the best — and we're happy to report finding a couple of reasonably priced Australian-made 'Best Buys'.

Departments

4 Choice Cuts

New phone numbers; tax surprise for frequent fliers; find the fruit; canned pearls; dressing to kill; do-it-yourself real estate; expensive collections.

23 Four-year index

A handy pull-out reference covering CHOICE articles from July 1989 to June 1993.

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46 The Green Page

Recyclable kettle available here; peat substitute; Green Spotlight — repackaging 'Post-It' notes.

47 What do you know?

Test yourself with our regular consumer quiz.



CHOICE CUTS

Communications

PLAN FOR NEW PHONE NUMBERS

TELECOM is planning to change your phone number — but don't panic, the changes don't even start to be introduced till next year, and there's a generous overlap of contingency plans that mean you'll be able to be contacted on your old number too for some time.

You may have already heard how Australia is running out of new phone numbers in some areas. In outline, the proposed plan to rectify this is:

- Instead of 54 area codes throughout Australia as at present, there'll be only four regional codes. These are: Central & West region, North East, Central East and South East. These new telephone regions don't follow state boundaries. The regional codes will be two digits — for example, 02 for Central East.
- An existing seven-digit number

will get a new single-digit prefix that corresponds to a smaller area within the region, giving you an eight-digit local phone number. Six-digit numbers will convert to eight digits by also incorporating part of their present area code.

- Taking Sydney numbers starting with 99 as an example, transition periods mean: from August 1994 to January 1995 you can be contacted on both your old and new numbers. For three months from February 1995, if someone calls your old number, a recorded message will advise of the new number. From May 1995 callers must use your new number only.

New numbers will be allocated starting late next year. It's a gradual change over the country, so some regions won't get new numbers till the end of 1998.

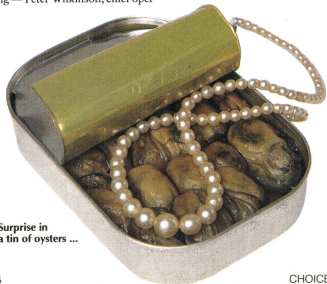
Silver lining

THE TIN'S YOUR OYSTER

CONTAMINATION is a dirty word in most contexts, but especially so in the food industry, where a maggot-infested bottle of tomato sauce could do more than make your stomach turn, and a carton of baby food deliberately injected with cyanide is a killer.

But every cloud has a silver lining — Peter Wilkinson, chief oper-

ating officer (retail) at Coles recently told an industry conference how a customer once found a pearl in a tin of smoked oysters. When shoppers find something 'extra' in a purchase they usually phone to complain. "This was the only thank you call we've had for contamination!" he said.



Surprise in a tin of oysters ...

Breakfast cereals

"MUM, THESE AREN'T BLACKCURRANT!"

THE blackcurrants positively gleam from the package and spring to life on the palm of Mum's hand in the TV ad, so imagine our subscriber's disappointment when she found the 'blackcurrant' variety of Kellogg's Mini-Wheats in fact contained 'fruit paste' made up of dried dates, dried sultanas, pear juice concentrate, glycerol and last and

probably least, blackcurrant juice concentrate.

"Blackcurrant is emblazoned all over the package and the telly ads show real blackcurrant fruit being compressed into the cereal," writes BB of Tasmania. When BB's daughter asked to try some of the Mini-Wheats, her response was "Mum, these aren't blackcurrant!"



The little logo suggests you'll get whole blackcurrants in your Mini-Wheats — but you might be disappointed.

Tax surprise

NOT-SO FREQUENT FLIERS

A NEW ruling from the Australian Taxation Office may bring frequent fliers back down to earth with a crash. The ruling states that the use of frequent flier points gained from business travel, even if it is paid for by your employer, gives rise to assessable income.

If, as a result of flying for business purposes, you are able to use

frequent flier points to obtain airline tickets, accommodation, car rental and so on, from now on you or your employer will be taxed on the fair market value of the benefit received.

Even if a family member uses the points, the person who accumulated the points from business travel will still be taxed.

Correction

LIGHT BEERS

CHOICE, April 1993

ON PAGE 19 we mentioned that one 'no-name' light beer, Pennies Bitter, had retired from the market. Liquorland, Pennies' distributor, has informed us it has never marketed a low-alcohol Pennies and that the full-strength product (4.5% alcohol) is "alive and well".

SMOULDERING LOOKS

ACCORDING to a story in the Japanese newspaper *Asahi Evening News*, American women have faced difficulties concealing a pistol in their clothing, due in no small part to the constraints of their anatomy.

"If a woman wears a holster, for instance, the swell of her hips causes the barrel of the gun to be pushed out and the butt to be pushed in, which can be painful," says Linda Mutchnick, designer of a new line of clothes for the security-conscious woman. "Off-the-rack garments just don't accommodate the additional bulk of

two-and-a-half to three inches of hard steel in addition to everything else." With a shoulder holster it can be difficult to get at your gun quickly, and it ruins the line of a good outfit.

Apparently Ms Mutchnick's design company *PistolERA* ("comfortable, concealing, stylish") is doing solid business in custom tailoring. "I ask clients what kind of gun they're carrying and where, which determines the strength of the interfacing and the gauge of elastic I use."

Is there a market in Australia for clothing of such calibre?

CASUAL YET ELEGANT EVENING GOWN
CONCEALING SHERMAN TANK



PLANE SPEAKING

AVOID collectors are known for their obsessive personalities, which may lead down unexpectedly expensive byways. Here's an example of a collection opportunity sent to us by a reader (and collector!) where the costs grow and grow.

The offer is for a series of cards with a photo and information about a different warplane on each card. It costs nothing to join — you get 30 warplane cards. You can choose to bail out after the 30 cards, by paying \$1, or you can carry on and request the five free gifts (including a 'camouflaged' filing box) and a further 20 cards. If you want to keep the extra 20 cards, that'll cost you \$5.65 plus \$1.75 for postage, handling and insurance.

From then on you'll receive further 'triple' packs at approximately monthly intervals. These cost somewhat more again, namely \$20.70.

You're free to cancel at any time without further obligation, so there's clearly no element of scam about this deal. But the full costs (and the regular monthly charge of \$20.70) are not disclosed at the outset — indeed, not even at the time of joining up. If you keep on collecting you'll end up with a lot of cards: about 96 packs and \$662 worth!

Before sending off for attractive mail order deals we suggest you write and ask for full details of cost. Collecting by regular instalment can be an expensive way to run your hobby.



SELL-IT-YOURSELF

WHEN it's time to sell your home would you consider doing it yourself? Real estate agents fulfil a useful service — and can more than pay for themselves if they negotiate an above-market price. But it comes at a significant financial cost. Many consumers would like to economise here, but are scared to attempt it without assistance. It's a big jump from relying wholly on a professional agent to doing it yourself.

A company called ANREPS has come up with an interesting compromise which offers support to home owners on the sale trail. For a fee (not a commission based on sale price) the company will provide:

- 'For Sale' and 'Open House' signs.
- A central office to take phone inquiries generated by your advertising and, if you like, make appointments — so you don't have to sit by the phone all day.
- Help to work out the market value of your home and to write your ads.
- Preparation of the contract for sale.

■ An information kit with all necessary forms and marketing advice.

■ Access to free legal advice regarding the transaction.

What does it cost? At present there's an upfront payment of \$295 which buys you the seller's kit and contract, plus four months of office assistance (note that commission agents don't charge an upfront fee). A further payment of \$950 follows if you sell the property. It's a service only provided in WA at present to our knowledge.

We haven't tested the scheme though in theory it looks a good system, particularly as it puts the consumer in a position of control and represents a saving of thousands of dollars. As you would expect, the local real estate agency industry is not pleased with the emergence of this new venture. However, having taken an active stance in the fight for deregulation of the solicitors' conveyancing monopoly in several states, estate agents can't now complain if the process of review extends to include their services and the value for money they offer the consumer.

Can you help?

VIDEO MEMBERSHIP CARDS

HAVE you had any problems with your video shop membership? In particular we would like to know if you've been made to pay additional charges (or for missing video tapes which you did not borrow) due to a poor system of security — for example, where a membership card lacks a photo or signature.

Has anything like this happened when you lost your card or at other times? Are there other problems you think all consumers should know about?

Please write to us with the details and the conclusion of your dispute. Write to **Video membership, CHOICE**, 57 Carrington Road, Marrickville 2204. Thank you.

The Diet Merchants

Like the statue inside every block of stone, weight loss programs promise to find the thin person inside every fat one. Do they fulfil this promise and at what cost to the consumer?

OVERWEIGHT and obesity are increasingly common conditions in our society. Leading health authorities are continually trying to educate the general public about the importance of maintaining a healthy weight. The thin images presented in advertising and fashion magazines and the prolific supply of diet books, diet plans and diet foods have turned this concern about overweight and obesity into an obsession with dieting for many people.

A whole industry has grown out of this social preoccupation with weight and dieting. In this article we have chosen to focus on major self-help groups, calorie-controlled catering services and the entrepreneurial programs which combine packaged foods, meal replacement drinks or menu plans with counselling and exercise programs.

Such companies profess to be soldiers in the war against obesity. Some actually seem to *guarantee* clients will lose weight and keep it off. Which ones provide genuine and helpful programs?

Sell, sell, sell

The sales tactics used by weight loss programs range from very soft to very hard. We sent volunteers along to the program of their choice (plus one to a dietitian in private practice) to assess how each company treats a potential new client. (See *The Programs* on pages 11 to 13 for our assessments).

Some, such as WEIGHT WATCHERS, did not use persuasive sales tactics at all.

Others used quite forceful techniques to encourage potential clients to buy programs.

One of our JENNY CRAIG customers says the service she received during her free consultation was "a bit like being run over by a friendly train. The lady did not draw breath for the first 40 minutes, and [only] then when I signed!" She says: "The language was all as if I had already agreed and signed up. I was in and that was it."

Heavy persuasion was used by a GLORIA MARSHALL consultant to get another customer to buy a program. Our client was told a 16-week program would normally cost \$750 but she could have it "today" for \$540. When she said she did not have that much cash, the consultant attempted (unsuccessfully) to persuade her to use a credit card or cheque to pay.

She then asked if the customer had a bank account she could withdraw money from and when that failed, if her husband could phone the salon and leave his credit card number. She attempted to get the client to leave a \$10 deposit. The customer finally said she needed the \$10 to catch the train to work but promised to think about the program and phone if she decided to proceed.

Some consumers may be strong enough to resist such overpowering sales tactics but those who are more vulnerable and desperate to lose weight could quite easily be talked into purchasing a program they don't really want or can't really afford.



"I lost 10 kilos, and it didn't cost me an arm and a leg!"

Ms V. of Milo

Making dreams come true — at a price

Testimonials from former clients with 'before' and 'after' photographs are the primary advertising tools used by most weight loss organisations. These advertisements certainly give potential customers hope they can make their body shape more attractive or acceptable. But the information about costs included in some advertisements could confuse consumers about how much money they will have to pay to make this 'dream come true'.

Some programs are happy to provide clear information about what their products/services cost. Others present the consumer with a confusing array of prices, making it impossible to clearly ascertain total program costs or exactly what goods and services will be included in the package. (We have listed the full complement of charges for each program in *The Programs*.)

JENNY CRAIG has been running television commercials stating customers can currently save over 75% off the company's service fee (usually \$185). Fine print at the bottom of the screen and a brief voice-over message towards the end of the ad suggest the consumer will also have to buy 'Jenny's Cuisine' at an additional expense.

In our opinion, the advertisement could confuse consumers about the cost of the program. Its impact is that the major cost of the program will be around \$46 (25% of \$185). In fact, in addition to the \$46, clients will pay from \$60 to \$82 a week for the company's packaged food (until they reach half their desired weight loss, when they begin to be weaned off the cuisine). If they want to continue with a maintenance program, they will have to pay another \$125, and they are encouraged to purchase a series of audio cassettes for \$94. The total outlay is a lot more than \$46.

The multitude of figures presented to the volunteer who visited NUTRI/SYSTEM also shows how confusing it could be for a consumer to sort out exactly what they would have to pay. The customer was told NUTRI/SYSTEM has a three-week introductory program for \$29 plus the cost of the company's pre-packaged food (\$76 per week). Alternatively, there is a 12-week program for \$92 (or, if you sign today, \$48) plus the cost of food. Finally, the client could elect to purchase the Gold Program for \$584 (she could have 50% off if she purchased the program on the spot) plus food.

Under the Gold Program, customers receive a \$100 bonus if they reach goal weight plus a Gold Card which entitles

Jenny Craig

"I WENT to Jenny Craig the first time when I was 19 because I was very overweight. Mum had been and was looking really good so I decided to give it a go," explains Karen Webb.

Karen recalls paying about \$300 for the Jenny Craig program, and the food cost her about \$70 a week until she reached the halfway point. She thinks the cost is reasonable — paying for the food is the same as paying for groceries at the supermarket, she says.

She describes going to visit her Jenny Craig counsellor as "just like going off to see a friend".

Karen eats three main meals and three snacks a day and doesn't find she is short of energy as a result of being on the diet. "I've got plenty of energy to play squash and golf," she says.

According to Karen, one of the advantages of the Jenny Craig program is that the staff are interested in their clients and prepared to be flexible. "There was some food I couldn't eat but they just swapped the whole day around," she says.



them to \$10 a week off the food after week four (which, again, is additional to other charges). The 'personal consultant' told our customer these savings meant the direct cost of the Gold Program was \$72. However, if the customer took 16 weeks to reach goal weight, she would in fact have to pay \$1216 for food (\$76 x 16), making the total program cost around \$1300 (\$325 a month). She would have to supplement the food purchased each week with her own fresh fruit and vegetables and, perhaps, still buy groceries for the rest of the family.

Confusing and often inconsistent verbal presentations of program costs are unacceptable. Consumers should be fully and clearly informed about the total cost of the program before they pay any money.

SUCCESS STORIES

Weight Watchers

CHRISTINE SHADAY first joined a Weight Watchers program about four years ago and managed to lose 13 kg in eight months. She had to stop attending her weekly meeting because it clashed with a TAFE course but has recently rejoined the program. This time she's lost about 7 kg in three months and is happy with her progress.

"I'd spoken to other people who'd been to Weight Watchers and had success. I just needed the group help. You can always lie to yourself — lean forward on the scales to get a different reading — but if you've got someone else there you have more incentive to lose weight," explains Christine.

The best part about the program, according to Christine, is that the company attempts to fit the diet into your normal eating habits. As Easter approached, for instance, members at Christine's meeting were told it was OK to eat chocolate provided they counted it out of their 'optional kilojoules' (part of the plan's food options). She also enjoys the group support given by other members at meetings.

The only weakness with the program Christine could think of is that the lecturers who conduct meetings are not trained nutritionists. "They can't answer curly questions then and there."

The program has changed Christine's life for the better, she says. It's changed the way she cooks and the types of food she eats and has encouraged her to exercise regularly.



Just sign here, please

The majority of programs do not have written contracts, but JENNY CRAIG and GLORIA MARSHALL do and both documents contain what we consider to be unacceptable clauses.

The JENNY CRAIG contract we obtained contains the following condition: "In the event of my withdrawal from the

programme, I shall not be entitled to receive a refund of any part of the total fees payable." This clause appears to disregard the consumer's legal right to a refund if the product/service they purchase does not meet the statutory conditions and warranties service providers must fulfil under the Trade Practices Act.

The GLORIA MARSHALL contract includes a disclaimer which attempts to exempt the company from liability for injury or ailment a client may suffer as a result of using the company's equipment or facilities. This clause disregards the service provider's statutory obligation to carry out its services with due care and skill — an obligation that cannot be negated by a disclaimer in a contract.

Good for your health?

JENNY CRAIG and NUTRI/SYSTEM employees wear laboratory-style white coats. GLORIA MARSHALL consultants

"prescribe treatments". But should consumers believe such companies offer the same level of care as members of the professional health industry?

The programs are designed by health professionals. No doubt clients who reach their goal and don't regain weight would argue their health has been greatly enhanced as a result of the program. However, the experiences of our volunteers show companies don't always take absolute care to preserve and enhance the customer's health.

HERBALIFE management informed us they advise certain people with special health requirements to consult a doctor before starting the program, but the consultant did not even ask for our client's current weight or desired weight loss, let alone questions about her general health.

THE DIET FACTORY management claims staff always ask for medical history details before agreeing to supply

food to a new client. Again, when our customer phoned the company, she had to volunteer information about medical history; it was *not* specifically asked for.

Most companies ask consumers to complete medical questionnaires. The presence of such systems for screening new customers indicates the companies, at least at the executive level, have good intentions. But do these mechanisms always work at the consultant/client level?

It is not adequate to ask people to voluntarily disclose on a questionnaire that they have an eating disorder. Eating disorder sufferers, especially those with bulimia nervosa, may be of normal weight and, by definition, are not likely to admit they have such a problem. When we sent customers who, by any healthy guidelines, did not need to lose weight to a JENNY CRAIG centre and a GLORIA MARSHALL salon, both were told they needed to lose weight. In the

A WAIST OF TIME?

OBESITY is certainly a problem in our society, but the problems associated with yoyo dieting and being *underweight* should not be overlooked. There is a big difference between the sensible weight management encouraged by organisations like the National Health and Medical Research Council (NHMRC) and the obsessive and extreme forms of dieting many people practise.

There is a growing body of scientific research that indicates yoyo dieting — alternately starving yourself and overeating — does not produce long-term weight loss. In fact it may make weight reduction and maintenance even harder over time and cause disordered eating. This is because 'habitual' dieters train their bodies to survive during starvation. Consequently they can put on weight by eating very little food.

Habitual dieting also creates an over-interest in food. If you're starving in some form or another, you will think of nothing else but food. This over-interest can eventually become a compulsive eating problem or a food obsession. Dieting adolescents are eight times more likely than non-dieters to develop anorexia nervosa and dieting has been found to consistently precede the development of bulimia nervosa.

When people with bulimia are successfully treated and manage to break the diet-binge-vomit cycle that characterises the illness, they notice they take off weight or maintain their weight effortlessly. Experts believe most people would find it easier to manage their weight if they stopped being compulsive about dieting. If you're finding dieting a disheartening waste of time maybe the answer is not to try another weight loss program but to get off the diet treadmill altogether.

Unless you're genuinely overweight (your doctor's told you to lose weight for health reasons, for example), rethinking your image of what your body 'should' look like could be more beneficial than trying to change your body itself through dieting. Your body image is influenced by cultural values ('thin is beautiful'), feedback from others, your own mental pictures of yourself and how happy you are with yourself generally. Rethink the importance of having the latest fashionable figure — you need to take care of your body, not punish it.



Is your self-image at fault rather than your body?

case of the GLORIA MARSHALL customer, if she'd lost the suggested amount she would have been very underweight for her height and therefore at risk of weight-related health problems.

The consultants did not appear to have any qualms about accepting these customers, who obviously did not need to lose weight. This brings into question the effectiveness of procedures used to screen customers, and ethical and professional standards in some quarters of the weight loss industry.

Professionals or facilitators?

Some companies say they prefer to recruit staff with qualifications in nutrition, dietetics, psychology or a related field. Employees are also required to attend in-house training courses. In some cases employees must pass exams and are regularly required to meet other performance standards.

In fact, many employees have no professional training — they are trained by the companies merely to be facilitators of programs that have been designed by health professionals. This may

account for procedures and systems not always being adhered to, even when they are put in place to protect the health of customers.

The more entrepreneurial companies also pay their staff commissions based on the number of programs sold. This can act as a disincentive for consultants to act in the best interests of the client's health.

You are what you eat

We analysed a three-day sample of the food products and written diet plans given to participants at their first visit to the various programs to examine whether they were nutritionally balanced, appealing and flexible.

We were forced to base some of the analysis on assumptions about the nutritional make-up of packaged food as there were no nutrition panels on the labels and exact quantities were not always supplied in menu plans. This lack of information made it difficult ultimately to compare one product with another.

The following diets lacked flexibility even though the programs may vary some foods according to your likes and dislikes: JENNY CRAIG, GLORIA MARSHALL, THE DIET FACTORY and HERBALIFE. In fact, we would not recommend the HERBALIFE program because it did not encourage people to eat a healthy

variety of foods. When the GLORIA MARSHALL program includes the company's Quick Trim meal replacement drink, it also fails to do this.

Work that weight off

Most programs emphasise that exercise is a key factor in successful weight management. Look for a program that recommends clients walk regularly or develop their own flexible exercise regimen based on guidelines supplied by the weight loss company. Avoid those which advocate the use of passive exercise machines or who fail to emphasise the importance of exercise at all.

I want my money back

"A woman went to a weight loss centre after advice from an acquaintance who belonged to the same centre. After discussions with a staff member, who was very persuasive, the woman signed a contract to attend 100 hours of treatment for a cost of \$797 and paid a \$50 deposit. This contract stated that she could cancel within three days of signing..."

"The woman decided to cancel after one day because of the high costs involved and the high-pressure selling techniques. She requested a refund that same day. Despite numerous phone calls over a six-month period, no refund was issued. The woman contacted the Department of Consumer Affairs, which contacted the centre, and the woman received her refund the following week." — NSW Department of Consumer Affairs.

Information about the refund policies of some weight loss organisations gathered by the Consumer Advocacy and Financial Counselling Association of Victoria (CAFA) in its study *Tipping the Scales* indicates the above case is not an isolated incident. Each program has a completely different policy about refunding clients' money and some of those policies are simply unfair.

GLORIA MARSHALL, for example, can be commended for giving new clients a three-day cooling-off period, but it will not refund if people want to drop out (for other than health reasons) after that period. Clients have six years to use the number of 'treatments' they have paid for if they want to discontinue their program for a while, but this doesn't help the client who is dissatisfied with the service they are receiving.

Measuring success

Weight loss organisations all claim to enable people to lose weight successfully and keep it off, but they rarely docu-

DIETARY GUIDELINES

IN OUR ANALYSIS of the weight loss programs we mention the Dietary Guidelines, set down by the NHMRC. Regardless of your weight you should follow these guidelines for a healthy diet; if you want to lose weight, cut out more foods from guidelines 3, 5 and 6. Some of the weight loss programs we analysed don't stick to all of them.

1. Enjoy a wide variety of nutritious foods.
2. Eat plenty of breads and cereals (preferably wholegrain), vegetables (including legumes) and fruits.
3. Eat a diet low in fat and, in particular, low in saturated fat.
4. Maintain a healthy body weight by balancing physical activity and food intake.
5. If you drink alcohol, limit your intake.
6. Eat only a moderate amount of sugars and foods containing added sugars.
7. Choose low-salt foods and use salt sparingly.
8. Encourage and support breastfeeding.

ASSESS YOUR WEIGHT

THERE IS a range of weights considered to be healthy for adults of any given height. The limits of this healthy weight range are estimated from the Body Mass Index (BMI). Medical research has shown a BMI between 20 and 25 is associated with the lowest risk of weight-related problems. (If our underweight GLORIA MARSHALL customer had followed the salon's advice she would have ended up with a BMI of 17.51)

You can work out your BMI by dividing your weight in kilograms by the square of your height in metres. So:

$$\text{BMI} = \frac{\text{Weight in kg}}{(\text{Height in m})^2}$$

For example, someone who is 1.7 m tall and weighs 58 kg would have a BMI of 58 divided by 2.9 (1.7 x 1.7), which is 20.

Body mass index was designed to apply to adults over 18. It also doesn't apply to anyone who does muscle-building exercise.

ment, in objective terms, how many people drop out, how many reach their goal weight and how many maintain their goal weight.

The companies assured us of high success rates but did not back up such claims with concrete evidence, making it impossible to evaluate how well they fulfil their promises to clients.

Relatively few independent studies of success rates have been conducted anywhere in the world. In the CAFA study, approximately 80% of the consumers surveyed felt they were not successful at either losing weight or keeping it off as

a result of participating in a weight loss program.

Can they change my life?

Each weight loss program claimed to be capable of educating its clients to achieve a permanent lifestyle change and, therefore, weight change.

The comprehensive approach to weight management taken by WEIGHT WATCHERS and the dietitian would be the most likely to educate consumers to change their whole lifestyle. Elements of the other programs could also facilitate lifestyle changes but most are let down

in some regard: some don't offer maintenance programs, for example. By taking away the consumer's ability to make their own food choices, others may fail to teach healthy eating habits in the long term. Other programs fail to emphasise the importance of exercise.

The strengths and weaknesses of each program (see *The Programs*) should give some indication of which ones are the most likely to educate people to maintain a healthy diet, regular exercise and healthy attitude towards their weight once they stop participating in a weight loss program.

CONCLUSIONS

Recommendations for the industry

The quality of weight loss programs varies dramatically. The fact Australian consumers spend around \$500 million on weight loss programs each year indicates there is a great demand for such services. However, it appears the industry is not being as responsible to its customers as it should be.

There is an urgent need for some form of industry regulation. In fact, the Consumer Advocacy and Financial Counselling Association of Victoria has formed a committee made up of consumer and industry representatives to examine the type of regulatory framework needed. This framework must be independent, enforceable and it must address the following points:

- Clear guidelines and standards for advertising must be established. Program costs should be fully and clearly disclosed in advertisements.
- Sales techniques used by the industry must be reviewed. Less emphasis should be placed on the number of programs staff members sell, which would mean changing the way employees are remunerated by abolishing or at least disclosing any commissions they earn.
- Programs should not be able to use documents or make statements implying they guarantee customers will lose all the weight they want and keep it off.
- Unfair clauses which disregard the consumer's legal rights should be removed from contracts.
- There should be full disclosure of costs to the customer before they purchase a program. The prices of individual products (including food) should be itemised but clients should also be told the total cost of prepackaged food for the entire program.
- There should be guidelines for the healthy entry of clients into programs — systems to ensure consumers with special needs are referred to appropriate health professionals. Regular independent audits and inspections of programs need to be conducted to ensure such guidelines and systems are adhered to by staff. Products and literature produced by the industry should carry warnings about the dangers of continual yoyo dieting and being underweight.
- The nutrition information currently supplied on labels is inadequate. Consumers deserve full disclosure of nutrition information on packaging.
- Minimum standards for staff qualifications and training must be set and adopted by the whole industry.
- A uniform refund policy must be adopted and conveyed to new clients before they purchase a program.
- An independent dispute resolution system should be put in place to cover the whole industry.
- All program claims should be supported by reliable and open information, with disclosure of drop-out and failure rates.

Recommendations for the consumer

To lose weight permanently you must be prepared to make some permanent changes to your lifestyle. If you make physical activity and sensible eating a part of your life, you have a good chance of losing weight and keeping it off without having to pay large amounts of money for a weight loss program. If you think you need support and guidance in your attempts to lose weight, there are some programs that, for a reasonable price, may be able to help you to reach your goal.

The ethical and professional standards followed by currently available weight loss programs vary greatly. Be particularly wary of programs that want to tie you down to a large advance payment of money. Before purchasing a weight loss program use this quiz, taken from Rosemary Stanton's book *The Diet Dilemma*, to decide if you are likely to get your money's worth. If you find even one 'yes' answer to the following questions, reject the program.

- Does it promise fast weight loss?
- Does it claim to be effortless?
- Does it claim to be new or revolutionary?
- Does it claim you don't need to exercise?
- Does it claim to have a magic ingredient of any sort?
- Does it involve buying special powders, pills or meal replacements?
- Does it claim you can eat anything you like as long as you take a particular product?
- Does it cut out carbohydrates found in bread, cereals, grains or vegetables?
- Does it claim you can eat unlimited quantities of meat, cheese and eggs?
- Does it promise that special garments, passive exercise machines, injections or vitamins will help weight loss?
- Does it tell you that you must eat an exact range of foods with no substitutions allowed?
- Does it imply you can eat as many kilojoules as you like and still lose weight?

WHERE TO GO

Only two of the programs we examined would be acceptable according to this quiz and our own criteria: WEIGHT WATCHERS, and the one provided by the dietitian in private practice.

The Programs

JENNY CRAIG

Weight Loss Centres

Jenny Craig

The program explained

Anyone who phones a centre is invited to attend a free introductory consultation. New clients give information on height, weight and frame size, sex and age, which is analysed by computer to help clients determine a weight loss goal. Customers are given a tour of the weight loss centre and an explanation of the program. They are asked to fill in a medical questionnaire.

Clients must purchase packaged foods (Jenny's Cuisine) each week and supplement them with fresh fruits, vegetables, whole grains and dairy products. There is also a Personal Exercise Plan (PEP) booklet which enables clients to develop an exercise program. A walking program consisting of two 60-minute audio cassettes is also available.

Clients visit the centre twice a week: once for a 20-minute counselling session and again for a lifestyle class which includes a series of 16 videotapes about the behavioural changes clients will need to make in order to manage their weight. Clients may buy a set of 16 audio tapes which reinforce the information covered in class each week.

When clients achieve half their desired weight loss, they are taught how to plan their own menus using their own food for two days a week. They continue in this way until they reach their goal weight, at which time they begin the one-year maintenance program. This program is structured to enable clients to balance their food intake without using Jenny's Cuisine. It also includes 14 maintenance classes which teach skills designed to prevent relapse into unhealthy eating behaviours.

Price: \$185 service fee (currently — early April — offering 75% off) includes counselling and weekly lifestyle class. Weekly cost of food ranges from \$72 (when you start the program) down to around \$50 (after you reach halfway point). Optional extras: walking and lifestyle counselling tapes: \$94. Permanent stabilisation (maintenance) service fee: \$125.

Strengths

- Medical questionnaire is thorough and staff members are given a plan of action to follow when assessing how to deal with clients who have special medical needs.
- Exercise is encouraged and the Personal Exercise Plan enables clients to develop their own exercise program.
- Maintenance program available which includes counselling and classes.
- Food plan is nutritionally balanced and provides a variety of foods including plenty of breads, cereals, fruit and vegetables. The meal plan is low in salt and fat and high in dietary fibre. There is enough variety over one week.

Weaknesses

- Advertisements give unclear information about program costs.
- Staff guarantee customers will lose all the weight they want if they follow the program. If they don't reach goal weight in the prescribed time they can continue on the program at no extra charge, but will have to keep paying for Jenny's Cuisine.
- While the diet offers a variety of food over the week, the client's ability to make their own food choices is taken away, at least initially. Those who only stay on the program for a short while may not be taught healthy eating habits for the future.
- Management claims they happily refund money but the com-

pany's contract states no refunds will be given if the client drops off the program. There is no formal cooling-off period.

Our verdict

There is very little intrinsically wrong with this program if you don't mind the expense involved. It is well designed, providing a combination of nutritional guidance, information about exercise and counselling. An objection might be that eating packaged food may not educate people about how to change their eating habits in the long term. Our major problem with the program is its delivery. Advertising and guarantees are confusing, program costs are not fully disclosed or are disclosed in a confusing manner, and staff don't always stick to the rules when considering a client's health needs.

DIETITIAN

Dietitian

The program explained

The client who visited the dietitian in private practice was given a meal plan, and lifestyle, medical history and current diet were discussed. The need to exercise was also raised.

Price: First visit \$52, subsequent visits \$26.

Strengths

- The client was given comprehensive information.
- Indicative weight suggested for the client was based on the Body Mass Index. He was not told he had to achieve this goal weight within a certain amount of time but was encouraged to set his own pace, although it was suggested he aim to lose half a kilo each week.
- Exercise was encouraged. The client was advised to walk 30 to 60 minutes each day.
- The meal plan is nutritionally balanced and complies with the Dietary Guidelines (see page 9) in terms of advising the client to eat a variety of foods, include plenty of cereals, vegetables and fruit, reduce fat and not add salt. The meal plan is very flexible and includes guidelines for eating out.

Weaknesses

- No obvious weaknesses.

Our verdict

The dietitian made no attempt to sell her services. She made it clear she was there to provide guidance and support but the client would have to resolve to make some lifestyle changes if he was serious about managing his weight. We considered the meal plan good because it encourages healthy eating and is not restrictive. Enlisting the help of a qualified dietitian is a reasonably priced, personal way to learn weight management and one way to ensure you are getting professional guidance and treatment.



The Diet Factory

The program explained

This is a calorie-controlled catering service, with meals delivered a week at a time.

Price: Costs vary according to the customer's calorie level. For a 1000-calorie diet, the cost is \$73 a week, 1200 calories would cost \$77 and 1500 would be \$80. No joining or delivery fees.

Strengths

- There are no contracts. Customers pay on a weekly basis and can

stop at any time. There is no hard sell.

■ There are no additional food costs — for example, fruit and vegetables are included.

■ New customers are given an approximate idea of the amount of weight they should lose but a rigid goal weight is not nominated.

■ The program provides sufficient nutrient levels to meet the recommended dietary intakes. It also complies with the Dietary Guidelines, providing a variety of foods including plenty of cereals, fruit and vegetables. It is high in fibre, and is not too restricted in energy content.

Weaknesses

■ There are no menu plans to help people learn to make their own food choices when they want to stop ordering their food from the company.

■ There is currently no exercise program although the introduction of exercise information sheets is imminent.

■ No official refund policy although management says they have never been asked for a refund and would gladly give people their money back if they were not satisfied.

■ Inadequate screening of new clients. Management claims customers are interviewed over the phone about their medical history but the consumer we asked to contact the company was not specifically asked any questions about her medical history.

■ Customers do not receive a nutrition breakdown of the foods they are sold.

■ There are no food choices for the participant to make and in the long term the diet may become too restricted and regimented.

■ The three-day meal plan we analysed contained too much saturated fat.

Our verdict

We approve of the way this program is sold: the absence of contracts and the weekly payment system. However, screening of clients is inadequate and we are not convinced customers would be taught healthy eating habits by purchasing the meals provided. Overall the meal plan is nutritionally balanced but we have reservations about recommending it because of the high saturated fat content of the meals we analysed.



Herbalife

The program explained

The Herbalife program includes a formulated meal replacement drink made up to replace two meals each day. The drink is to provide 418-825 kilojoules per day depending on how it is made up (recipes given include making it up with skim milk and fruit juice). The participants would also have to take six vitamin B₆ tablets per day, three vitamin and mineral tablets and three unsaturated fatty acid supplements. There are also optional pills including three potassium and Vitamin C tablets and three to six fibre supplement tablets. You are supposed to eat one normal meal a day including a lean serve of protein and vegetables or salad and one serve of carbohydrates, plus three snacks per day chosen from a list of fruits.

Price: The cost of one month's supply of the current full weight loss program, which includes the meal replacement formula and dietary supplements, ranges from about \$150 to \$200.

Strengths

■ No joining fees or contracts.

■ Customers may return products to the selling distributor within 30 days for a total refund or replacement.

■ Labelling carries cautionary statements about the need for medical opinion being sought by some people with special health needs before embarking on a weight loss regimen.

■ The program is nutritionally balanced in terms of meeting the recommended dietary intake, but only because of dietary supplements.

Weaknesses

■ The company states it screens new clients by asking them questions about their medical history, but our client was not even asked about her current weight, let alone about her health.

■ The program doesn't encourage eating a wide variety of foods so does not comply with the Dietary Guidelines even though it is low in fat.

■ The participant would get bored following this diet. The snack list includes fruit only. The options only include varying the flavour of the formula drink and the one meal of the day is chosen within a guideline.

■ The program's low energy content may result in weight loss but it is likely the participant would also be hungry.

■ Replacing two meals a day with a formula drink may mean certain food constituents are not being consumed that are important to our diet. These may not be adequately replaced by taking supplements.

Our verdict

This program is not recommended because, despite supplying an excess of nutrients, largely in tablet form, the diet is not consistent with the Dietary Guidelines. It simply does not encourage the consumer to eat the variety of foods required for a healthy diet and we don't think customers would learn healthy eating habits from it. It would be difficult to stick to for any length of time because of this lack of variety and very low energy content. Program information does not promote healthy eating habits.

Gloria Marshall

FIGURE SALONS OF AUSTRALIA PTY. LTD.

Gloria Marshall

The program explained

New clients receive a free consultation at a Figure Salon. The diet and exercise program are explained at the first consultation and the client is weighed and measured. Women (this company is for women only) who purchase a program are supposed to come to the salon three times a week for counselling and to use passive to low-impact exercise equipment. Customers are weighed every visit and measured every 10 visits.

In addition to the exercise program, clients are given calorie-controlled menu plans and may be asked to purchase the company's Quick Trim meal replacement drink. Once clients achieve their goal of 'total figure correction' they can purchase a six-month or year-long maintenance program. During that time they may visit a salon as many times as they want.

Price: The Quick Trim meal replacement drink costs \$49 for a 1 kg can, which lasts 14 meals. New clients pay \$6 per half-hour session; you can't pay as you go, but if you pay for a prescribed number of sessions within 30 days the price is reduced by close to 10%. So, for example, if a new client purchased 112 sessions (about nine months and 14 inches lost – Gloria Marshall works in inches and pounds), the flat cost would be \$672, reduced to \$604 if paid in full within 30 days. Then you have to add the cost of any Quick Trim. The maintenance program costs \$450 for six months.

Strengths

■ Moderate weight loss is recommended. Clients are told to aim for losing about 1 kg each week.

■ There are food substitute lists for people who do not like particular foods.

Weaknesses

■ A disclaimer in the company's contract is unfair and would be

voided by the Trade Practices Act. (See *Just sign here, please* on page 7).

■ Management says if a potential client has certain medical problems they are told to follow their doctor's advice and take the menu to their doctor. However, we don't believe new clients are thoroughly screened. Few questions were asked about our customers' medical history.

■ Despite having a commendable three-day cooling-off period and management's undertaking to assess refunds on a one-to-one basis, the contract states no refunds are given once the cooling-off period has elapsed. Instead, when someone joins they buy a certain number of treatments, which are available to be used by them within six years. This is no good if the client is dissatisfied with the program as a whole.

■ The meal plan cannot be recommended when it includes the meal replacement drink. It is nutritionally balanced in terms of recommended dietary intakes but does not comply with the Dietary Guidelines as it doesn't encourage consumption of a wide variety of foods.

Our verdict

Another expensive program. It cannot be recommended if the meal plan includes the Quick Trim meal replacement drink. By using it to replace a good part of two meals a day, constituents of food that may be important to our diet are not necessarily provided. The inclusion of the drink doesn't encourage healthy eating habits.

The sales practices used by this company are definitely hard sell.

nutri/system®

Nutri/system

The program explained

The full service program includes nutrition instruction, eating behaviour counselling, a meal plan of between 1200 and 1500 calories, self-directed exercise and a maintenance program. Clients are expected to purchase packaged food until they reach goal weight.

Price: Packaged food: \$62 to \$76 per week. Maintenance program sold separately for \$99. Introductory program — three weeks for \$29; 12-week Turnaround — currently \$48 (normally \$92); Gold Program — \$292 if purchased at initial consultation, \$584 otherwise.

Strengths

■ No written contract and no hard sell.

■ The importance of exercise is emphasised and the company plans to introduce walks for clients organised through the company's weight loss centres.

■ Their 'full service' program offers a maintenance program once goal weight has been achieved, or the maintenance program can be purchased separately.

■ Moderate weight loss is encouraged. They estimate a client to lose between 0.5 and 1 kg each week.

■ The meal plan is nutritionally balanced.

Weaknesses

■ Screening procedures may not be thorough enough.

■ Guarantees are confusing. Consultants imply reaching goal weight is guaranteed when, in fact, the company offers only a service continuation guarantee on the Gold Program.

Our verdict

We found staff at this company to be less 'hard sell' than similar organisations. However, information about program costs and guarantees is confusing. The meal plan included in the program is nutritionally balanced, with variety provided over the week due to the inclusion of food exchange lists. Participants are able to choose

which main meals to order. If the customer continued to eat the prepackaged food for a long period the program might become too regimented and healthy eating habits might not be acquired.



Weight Watchers

The program explained

Classes are held regularly in most local areas and are usually attended once a week. Members are weighed at each class. There is a lecture each meeting about a particular aspect of weight management, and group discussion. Members are encouraged to participate in discussion by sharing their own experiences and supporting others. Members elect a goal weight range that is approved by the lecturer, and once within that range decide on a specific goal weight.

Members receive more written information about the program at each weekly meeting. This program literature provides information about what foods you can eat, how much to eat and how to choose and keep track of your meals and snacks. Recipes are provided. The program also includes guidelines for exercise and information about how to incorporate weight management into a normal lifestyle. For example, members are taught how to control their eating when they dine out or on special occasions.

Price: The registration fee is \$20 plus the \$12 weekly meeting fee, thereafter weekly meeting fee \$12.

Strengths

■ No contracts or service guarantees to sign.

■ Goal weight ranges are determined from the Healthy Weight Range of the Australian Nutrition Foundation and gradual weight loss (around 1 kg a week) is encouraged.

■ The company advises you to consult your doctor while participating in a weight control program and encourages you to have periodic check-ups. Members have to be at least 4.5 kg (10 lb) above the lower end of their healthy weight range before they are allowed to join.

■ There are no set times for achieving goal weight.

■ A maintenance plan is given to members who have achieved goal weight. Lifetime membership (allowing free attendance at any meeting) is awarded to a member who has achieved goal weight and, after completing six paid weeks of the maintenance program, is no more than 1 kg over it.

■ The menu plan provides sufficient nutrients to meet the recommended dietary intake and complies with the Dietary Guidelines. New recipes and meal plans are given each week to help in meal planning but essentially members are educated to use normal foods in appropriate combinations and amounts. In the long term the food selections and options lists cover most foods, thus warding off boredom.

Weaknesses

■ Our customer was not asked for very extensive information about her medical history even though the company states it requires people to disclose such information.

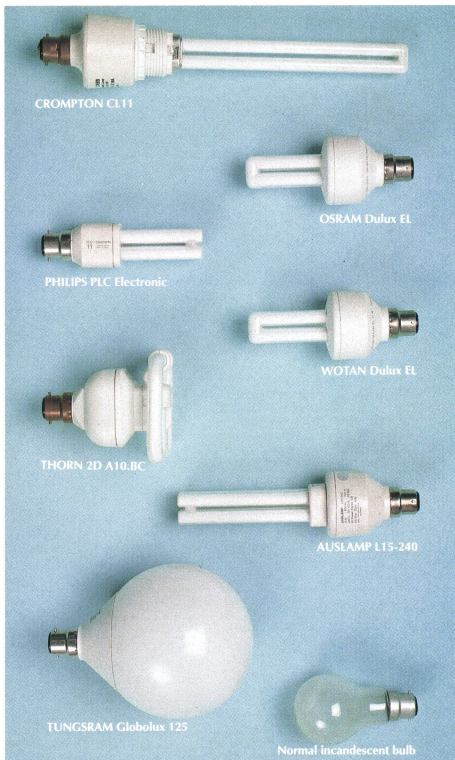
■ The staff are former members, and although trained in the program they aren't specifically educated to help people, for instance, with eating disorders.

Our verdict

Apart from going to a professional dietitian this is the only program that combines education about healthy but normal eating and exercise with emotional support but *without* coercive sales pitches and confusing contracts and guarantees. The program is one of the two most likely to help you to manage your weight in the long term without jeopardising your general health or that of your bank balance. □

LET THERE BE LIGHT

Compact fluorescent lamps use less energy than normal light bulbs and should last much longer — but we found a few duds in our testing.



This photo gives an idea of the comparative size of the long-life bulbs — some simply may not be suitable for where you want to put them.

THERE'S ONLY one way to test light bulbs claiming long life and that's to keep them going till they drop. After 4000 hours of testing (roughly two to three years of normal life) we're still only halfway through their predicted life, but in a few months' time a change to the Australian Standard will force half the compact fluorescents in our test off the market (this has already happened in Victoria). Some will be modified before September to conform to the Standard, but will of course then not be the same as the product we've tested. So it seems timely to give you the progress results, particularly as some of the bulbs to be banned are among the best performers at this stage. For the reason behind the ban, see *Power system problems* on page 16.

BRIGHT IDEAS

The standard incandescent light bulb in most people's houses today is not very different from the original model invented by Edison in 1879. It is basically a metal wire that gets very hot when you put electricity through it — white-hot in fact — and therefore gives off light. While it is simple and cheap, it isn't very efficient. Most of the electrical energy consumed by an incandescent light bulb is converted into heat rather than visible light.

A fluorescent lamp, on the other hand, applies a current to a mixture of gases in a tube. The gases create ultraviolet light, which then causes a phosphor coating inside the tube to glow (fluoresce). Because they don't waste as much energy on heat, they use roughly a fifth of the energy consumed by an incandescent light bulb to produce the same amount of light. Compact fluorescents work on the same principle, but are designed to fit in standard household light fittings, and the phosphor mixture is supposed to produce light of a similar colour to incandescent bulbs.

All fluorescent lamps need a component called a ballast to adjust the current going to the tube. It can either be separate from the light tube or in one piece with it.

OUR TESTS

The main questions we wanted to answer in this test are: do compact fluorescent bulbs last as long as is claimed and are they as efficient as claimed? We also wanted to know whether the number of times they're turned on and off has any effect on their life, so we bought 60 samples each of eight brands of compact fluorescent lamps and split each brand into three groups of 20. One group of 20 runs on a 20-minute cycle, where they are turned on for 15 minutes and off for five. The next group is on a 60-minute cycle, being turned on for 50 minutes and off for 10, while the last group is on a three-hour cycle: turned on for 2 3/4 hours and off for 15 minutes.

After 4000 hours, four brands — CROMPTON, OSRAM, PHILIPS and WOTAN — still have 60 lamps operating. One brand failed badly but the manufacturer claims to have fixed the problem (see *Smartlamp* below). The other three brands have lost between eight and 21 of the original 60 lamps. Considering the cost of replacement, these are unacceptably high failure rates. Some points stand out:

- Eight of the AUSLAMP bulbs failed before 1000 hours.
- All but one of the TUNGSRAM lamps on the 20-minute cycle failed by 4000 hours.
- Lamps have tended to fail more quickly if they are turned on and off more often.

The two-piece units have been designed so that if the tube fails, you only have to replace that part of the lamp, costing you around \$10 rather than \$25 or so. It was easy for us to tell with these units whether it was the tube or the ballast failing. Most failures were with the tubes but a couple of early failures on the AUSLAMP were in the ballast. On the only integral unit with any failures, the TUNGSRAM, it was impossible to determine which part failed, but you would have to buy an entirely new unit anyway.

We measured the light output when the lamps were new and at 4000 hours (see table overleaf). All grew dimmer with age, but like normal fluorescents the greatest reduction is earlier in their life and they shouldn't get too much dimmer between 4000 and 8000 hours.

When you first turn a compact fluorescent lamp on you may find it much dimmer than a comparable incandescent bulb. This is because they take a few minutes to reach their maximum brightness. They are not really useful for rooms where you are only going to turn the light on for short periods and then off again.

SMARTLAMP

One brand tested but not included in the final table is the SMARTLAMP. After 4000 hours, 12 of the original 60 lamps had failed. While only two SMARTLAMPS had failed by the 4000-hour point on the three-hour cycle, we have some early results which indicate over half the lamps on this cycle failed shortly after. Most of these were ballast failures.

The manufacturer, Electronic Ballasts, admits there was a problem with the product we tested but claims it has now been corrected. SMARTLAMPS with a batch code of 9238 or earlier may well fail sooner than you would expect. The company has told us it will replace these faulty ballasts at its cost.

SAVING MONEY

The average compact fluorescent lamp costs around 40 times as much as an incandescent bulb, but provided it lasts the distance will pay for itself easily in reduced electricity costs.

If a 60 W incandescent light bulb lasts for 1000 hours as is claimed, it will

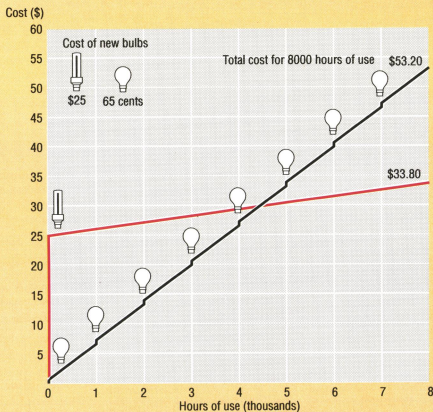
use 60 kilowatt hours (kWh) of electricity during that time. At 10 cents/kWh that's six dollars; at 12 cents/kWh you pay \$7.20. This cost far exceeds the 60 cents or so the bulb cost in the first place.

A comparable 11 W compact fluorescent lamp, on the other hand, will use 88 kWh over its claimed 8000-hour life. This amounts to roughly \$8.80 to \$10.60 in electricity costs, significantly less than the \$25-\$30 purchase price.

The graph below compares these costs. Provided the compact fluorescent survives, it will have paid for itself after a little over 4000 hours. However, if it fails just after 4000 hours you've only broken even, and if it fails earlier it's cost you more than sticking to incandescent bulbs. If an incandescent bulb fails early, it has only a marginal effect on its running costs.

We found four brands in our test where no lamps have failed at the 4000-hour mark. But we also found four brands where significant numbers (13%-35%) failed by that point. Of these, we haven't included the SMARTLAMP in the table because the lamp you can buy now is different from the one we tested.

If your compact fluorescent bulb lasts 4500 hours you'll have broken even in the trade-off between electricity costs and purchase price (based on an electricity cost of 10 cents per kWh and the purchase prices shown below).



LONG-LIFE LIGHT BULBS

1

2

Brand/model (in rank order)	Manufacturer/ distributor	Origin	Price (\$)*	Type	Ballast type	Weight (g)	Length (mm)	Maxim width (n
CROMPTON CL11 (A)	Crompton	not stated	8/13 (A)	2-piece	ferromagnetic (A)	385 (A)	316 (A)	61
OSRAM Dulux EL	GEC-Osram	Germany	24/31	integral	electronic	135	144	58
PHILIPS PLC Electronic	Philips Lighting	Holland	20/34	integral	electronic	105	137	38
WOTAN Dulux EL	Wotan Lamps	Germany	20/30	integral	electronic	135	143	58
THORN 2D A10.BC	Thorn-ALI	UK	26/28	2-piece	ferromagnetic	390	108	109
AUSLAMP L15-240	Ultralite	Australia (B)	20/28	2-piece	electronic	160	203	55
TUNGSRAM Globolux 125	Tungsramp	Austria	32/37	integral	ferromagnetic	440	170	124

* Prices shown indicate the range found in nationwide checks in March 1993.

** Light output is given in terms of wattage of an equivalent standard incandescent light bulb.

(A) Not supplied with a ballast. Dimensions and results given include a standard ferromagnetic ballast purchased separately for around \$25.

(B) Designed and tested in Australia but bulk of assembly done in China.

(C) Manufacturer claims design will be changed to comply with Standard.

(D) The claim on the box was no more specific than this.

HOW GREEN ARE THEY?

The other main reason for buying compact fluorescents is their improved environmental friendliness. By consuming one fifth the electricity of incandescent bulbs, they are reducing the electricity demanded of power stations and ultimately the levels of carbon dioxide being produced.

From our results, their efficiency isn't quite as high as the manufacturers claim. Generally they consume more power and produce a little less light than they would have you believe, but they are still much more efficient than incandescent light bulbs.

There are also claims they're not reducing energy consumption quite as much as they appear to because they have a low power factor. This means they draw more electricity than they need but don't consume it all.

Because some power is lost in the power lines, the more electricity drawn means the more that is wasted. A 'perfect' power factor would be 1; the worst in our test was 0.39, which means that bulb is drawing two and a half times more current than it needs. However, the power losses resulting only amount to a few watts — a pittance compared to the extra 50 watts or so needed to run a comparable 60 W incandescent bulb.

CONCLUSION

At the halfway point of this test, four brands have had no bulbs fail and all four are recommended. Three, the OSRAM, PHILIPS and WOTAN, do not meet requirements of the Standard (see *Power system problems*) and will not be available after September 1 this year in the same form as we tested. The failure does not mean they're dangerous. They may

cause problems to the power supply system in the future and the authorities want to nip this in the bud. They won't have any effect on the power supply in your house, though, so while they're on sale you may as well buy them.

The fourth recommended bulb, the CROMPTON, is only sold as a tube. It doesn't have any problems with the Standard, but you need to buy a ballast separately. The tube is also very long (see photo), which may be awkward or unsightly in some situations.

WHAT TO BUY

CROMPTON CL11*	\$8-\$13*
OSRAM Dulux EL	\$24-\$31
PHILIPS PLC Electronic	\$20-\$34
WOTAN Dulux EL	\$20-\$30

Prices shown indicate the range found in nationwide checks in March 1993.

* Not supplied with a ballast — you have to buy one separately for around \$25.

POWER SYSTEM PROBLEMS

COMPACT FLUORESCENT lamps first became popular in 1990. Claims that they use only a fifth of the energy of standard incandescent light bulbs and last eight times as long helped some consumers overlook their high purchase price. They also helped the electricity authorities overlook the fact that some of these lamps didn't meet the Australian Standard for fluorescent lamps and exempt them from its requirements.

The problem is with some of the ballasts — they cause interference ('harmonic distortion') in the power system, which reduces the efficiency of the system as a whole and can increase interference in nearby wires (such as telephone lines). It is failure to comply with the Standard's requirements on harmonic distortion that is now going to force certain compact fluorescents off the market.

The exemption from the Standard only applied to self-contained lamps where all the components were in one unit. When manufacturers produced two-piece units (separate lamp and ballast) they had to comply with the Standard. So when a couple of Australian companies started producing two-piece units that

complied with the Standard, they asked why imported units should be exempt when there were local products that complied.

The electricity authorities agreed and requested the new Standard (which came into effect in October last year) cover integral units as well. This was accepted but a clause was inserted deferring compliance with one test (harmonic distortion) until September 1, 1993.

The Standard has no authority on its own. It is up to the various electricity authorities to enforce it. So while most states will allow the lamps that don't comply to be sold until September, the State Electricity Commission in Victoria jumped the gun and banned them as of March 1 this year.

Harmonic distortion is not isolated to compact fluorescents. Computers and other electronic components also cause the problem, but there are no requirements for them to comply with relevant standards. It is estimated that all these items combined will account for 50% of the electrical load in developed countries by the year 2000, so perhaps it's not surprising electricity authorities are starting to get stricter about standards.

3	4	5	6	7	8	Light output (W)**		Survival rate (%)	Brand/model (in rank order)	equal
						claimed	measured after: 100 hours 4000 hours			
61	pass (A)	0.44 (A)	11 (A)	15.8	not stated (A)	73	67	100	CROMPTON CL11 (A)	
117	fail (C)	0.47	11	11.0	60	57	51	100	OSRAM Dulux EL	
49	fail (C)	0.62	11	12.3	60	59	52	100	PHILIPS PLC Electronic	
71	fail (C)	0.46	11	11.2	60	59	51	100	WOTAN Dulux EL	
32	pass	0.39	14	14.8	60	57	48	87	THORN 2D A10.BC	
32	pass	0.85	15	15.1	75	82	75	70	AUSLAMP L15-240	
36	fail	0.47	13	13.7	60-75 (D)	60	53	65	TUNGSRAM Globolux 125	

1 TYPE

There are two main components of a compact fluorescent lamp: the tube and the ballast (see *Ballast type* below). '2-piece' units separate these components so that if one piece fails you don't have to throw the working bit away as well. 'Integral' lamps have both components in the one unit.

2 BALLAST TYPE

The ballast regulates the power supply to the tube. In normal fluorescent tubes it is located in the light fitting, but in compact fluorescents it must be connected to the tube so you can fit it in a standard light socket. There are two types of ballast. A ferromagnetic ballast is considerably heavier (compare the figures in the weight column).

3 WARM-UP TIME

Unlike incandescent light bulbs, compact fluorescents take a while to reach full brightness when turned on. You probably

wouldn't want to use them in a room where you mainly turn the light on and off quickly, such as a bathroom. We measured the time taken to reach 80% of their maximum brightness, which varied from half a minute to about two minutes.

4 HARMONICS COMPLIANCE

Some compact fluorescent lamps cause a problem called harmonic distortion in the electricity system (see *Power system problems* opposite). On their own they have little effect, but if there were enough of these lamps around the effect could be significant. A legislative loophole has meant two-piece units must comply with Standard requirements on harmonic distortion but integral units don't have to. Changes to the legislation mean integral units must comply with these requirements as of September 1 this year. Bulbs with a 'fail' in this column may not be on sale after that date if their designs can't be changed.

5 POWER FACTOR

As the ballast regulates the power supply to the tube, it draws a certain amount of electricity it doesn't actually use (see *How green are they?* opposite for more discussion of this). The power factor is a measure of the electricity used as a fraction of the total drawn; a perfect power factor is 1. If a lamp has a power factor of 0.5, it is drawing twice as much current as it needs. The extra current does not add to your electricity bill but it means more power is lost in the power lines, affecting the efficiency of the electricity system as a whole. However, it's worth noting a compact fluorescent lamp with a poor power factor still uses much less energy overall than an incandescent bulb.

6 POWER CONSUMPTION

Energy efficiency is one of the big claims of compact fluorescent lamps. However, most lamps in this test consumed more energy than claimed. Two-piece lamps may also claim a certain power consumption for the tube but neglect to mention the ballast will consume a few watts of electricity as well.

7 LIGHT OUTPUT

Light output is actually measured in lumens but since most people don't relate to lumens, compact fluorescent manufacturers describe their lamps as equivalent to a certain wattage for incandescent light bulbs. Generally the following wattages are equivalent:

- 11 W fluorescent = 60 W incandescent.
- 15 W fluorescent = 75 W incandescent.
- 20 W fluorescent = 100 W incandescent.

8 SURVIVAL RATE

We are testing 60 lamps of each brand, turning them on and off at regular intervals (see *Our tests* on page 15 for details). The percentage figure in this column is a measure of the number of lamps still alive after 4000 hours. The top four brands have had no failures in this period, while the other four have had a significant number of failures — between eight and 21 lamps.



The Crompton bulbs have all lasted the distance so far and comply with the Australian Standard — but you'll have to buy a separate ballast as they're not supplied with one.

DIGITAL RECORDING

DAT, DCC and MiniDisc — three new systems promise to let you record your favourite music with compact disc digital quality. But before you rush out and buy, read this appraisal of the pros and cons of each system.

COMPACT DISCS are one of the great success stories of home entertainment. Australians love them, their neat looks and stunning clarity of sound — and no more tape hiss or vinyl scratching to intrude on the Vivaldi.

But we're also hooked on cassette tapes for their convenience and the possibility of recording only the bits we want.

The conventional compact cassette system is in most homes, cars and on joggers' waistbands. First developed in the '60s, it's gone about as far as the technical format will allow in terms of sound quality. But it has real limitations: tape noise (hiss) and wow (a rising and falling of pitch due to variations in tape speed) are two perennial problems with cassette tapes and play-

ers. Digital systems don't suffer from these, hence the grail of designing a digital recorder for consumers.

HOW DO THEY WORK?

Digital Audio Tape (DAT) recorders have been available for a few years now and prices have already dropped. The system uses a small cassette tape which has sound quality comparable with a compact disc. Whereas with a common compact cassette recorder the tape moves past a stationary magnetic head which puts sound signals onto the tape, DAT works like a video recorder — with a revolving head and moving tape. This increases sensitivity.

Philips went down a different track with its Digital Compact Cassette tape recorder (DCC). Philips wanted a system which allows the consumer to play

existing prerecorded cassette tapes as well as offering digital recording: it's a dual system, with separate playback heads for conventional analogue cassette tapes and DCC tapes. However, you can only record DCC tapes. These are about the size of compact cassettes, but can't be played (and are shaped not to fit) in a normal cassette player.

Unlike DAT, DCC keeps the recording head stationary (as does a conventional cassette system). Signal compression techniques are used to get the sounds being recorded onto a reduced space on the tape. In simple terms this is achieved by not recording small signals which are 'in the shadow' of large signals.

Sony chose a different way. Its recordable MiniDisc can be thought of as a small CD — not a tape. The disc is

How the sizes of the recording media compare. From left to right: hi-fi VHS, compact cassette, DCC, MiniDisc and DAT.



MODELS TESTED

FOR THIS REPORT the lab reviewed 20 single-well compact cassette decks (including a Nakamichi and a Kenwood), 10 double-well cassette decks, two hi-fi VHS recorders, two DAT units (JVC XD-Z505 and Sony DTC-670), two DCC recorders (Philips DCC 900 and Technics RS-DC10), and the Sony MZ-1 MiniDisc.

The Sony DTC-670 is not available in Australia. The nearest (though not identical) model is the DTC-750, available for around \$1500.

64 mm in diameter and is placed inside a case about the size of a 3.5 inch computer diskette. It's read by a laser beam, just like a CD, and records using a mix of optics and magnetism. The disc is less information-dense than DCC, so it too uses data reduction techniques. A computer chip gives the user control over display information, track searching and programming. The disc can't be used in existing CD players.

Before you invest in these technologies you should be aware of a particular limitation: though you can record a CD onto DAT, DCC or MiniDisc — making a digital-quality copy — the software prevents you making further digital copies from this first-copy recording. This is due to an agreement between the suppliers to try and limit copyright piracy. If you want to make a copy of a copy you need a non-digital recorder, such as a compact cassette.

For this test we compared ordinary (and top-model) cassette decks (including double-well units for tape-to-tape recording) with the new DCC, DAT and MiniDisc recorders. We included hi-fi-quality VCRs as they can be used as sound recorders with good results. Testing was carried out for the European consumers' associations' international testing organisation at Consulab in The Hague, Netherlands.

Apart from technical tests for sound quality and ease of use, there was a listening test where the panel was subjected to all types of music and speech. System profiles are given on the right and overleaf.

CONCLUSIONS

Though a top-quality compact cassette recorder can record with sound quality approaching that of a CD, there are



DIGITAL AUDIO TAPE (DAT)

The first digital tape recording system for consumers.

Manufacturers: JVC, Sony.

Price: \$1400-\$2500 — little further reduction is expected.

Maximum recording time: 120 minutes (240 with some loss of quality).

Unit size: Average, but portables are available overseas too.

Availability of prerecorded material: Almost nil — and not expected to improve.

Cost of blank tapes: \$23 (90 minutes).

Advantages

- CD sound quality when recording from a digital source (such as a compact disc).
- Good information display, with some recording and playback information.
- No unwanted noise or wow.

Disadvantages

- Limitations on track access — you have to search through the tape as with a compact cassette system; you can't punch in a track number and jump straight to it.
- Confusion with track markers — when there is silence or a quiet passage the DAT recorder may interpret this as the end of the track and mark the tape accordingly. This affects later track programming and tracing functions. Briefly, you could end up with different track marking from the CD you recorded.
- Sound dropouts may occur if tape is faulty.



DIGITAL COMPACT CASSETTE (DCC)

A digital cassette tape system which can also play your existing compact cassette tapes.

Manufacturers: Marantz, Philips, Technics.

Price: \$1500-\$3000.

Maximum recording time: 2 x 45 minutes.

Unit size: Average — not really portable (though portables are planned).

Availability of prerecorded material: Some sale material in pop, rock and classical, but more is planned.

Cost of tapes: blank \$16 (90 minutes), prerecorded \$28.

Advantages

- CD sound quality when recording from a digital source (such as a compact disc).
- Good track-marking system — it takes the markers from your CD.
- Very good display: if playing a prerecorded DCC it will display the name of the tape and the track. However, you can't label your own recordings.
- No unwanted noise or wow.
- It will also play your standard compact cassettes (though it won't record them). You can keep your existing cassette collection! (Note: DCC tapes are shaped so they won't fit in your conventional cassette player.)

Disadvantages:

- Limitations on track access — you have to search through the tape as with a compact cassette system; you can't punch in a track number and jump straight to it.
- Sound dropouts can occur if tape is faulty.



MINIDISC (MD)

This is not a tape system like DAT and DCC, but uses a small recordable variant of the compact disc.

Manufacturer: Sony.

Price: Australian release due in September/October 1993.

Maximum recording time: 60 minutes (planned extension to 74 minutes later this year).

Unit size: Very small.

Availability of prerecorded material: Small catalogue of pop and rock at present; no classical yet.

Cost of discs: No discs available here yet.

Advantages

- Near CD sound quality when recording from a digital source (such as a CD).

- Best display of the lot: name of prerecorded disc, track name, and you can label your own recordings. Best of all a track can be removed easily or even replaced by a new one, thanks to the built-in computer software.

- Track access, search facilities, random play etc are as good as with a CD player.

- As it is not a tape system there is no problem with potential sound dropouts.

Disadvantages

- The dynamic range is more limited than for DAT and DCC — that is, noise is more likely to intrude on quiet passages.

- Noise reduction is not as good as with DCC, DAT or hi-fi VHS systems — it is really only comparable with a good cassette deck. This may improve with future models.

- The only MiniDisc unit at present is a portable model — its controls are small and fiddly to use, and it's bulky for a portable. It has a short battery life (about 60 minutes for recording and 75 minutes for playback).

- More limited reproduction of high tones than with DAT and DCC systems.



HI-FI VHS RECORDER (VHSF)

A hi-fi sound-quality version of a video (VHS) recorder (last tested in CHOICE, October 1991).

Manufacturers: Many.

Price: \$700-\$1000

Maximum recording time: 240 minutes (can be doubled with some loss of quality).

Unit size: Large.

Availability of prerecorded material: Little.

Cost of tapes: blank up to \$13 (depending on length), prerecorded \$20-\$30.

Advantages

- Near CD-quality recording.

- Uses normal video (VHS) tapes — readily available and inexpensive.

- Virtually no noise.

- Long uninterrupted running time.

Disadvantages

- No special programming or track access features: just record and playback.

- You can expect some sound incompatibility between tapes recorded on one unit and played on another.

- No effective display.

- Sound dropouts can occur if tape is faulty.

- Dynamic range is not as great as with DAT and DCC.



CONVENTIONAL COMPACT CASSETTE

This is the common cassette tape recording system found in most homes, cars and on portables.

Manufacturers: Many.

Price: \$30-\$2000.

Maximum recording time: 2 x 55 minutes.

Unit size: There are a number of size options, from portables to large decks; generally the better sound quality is on the larger decks.

Availability of prerecorded material: Lots — but it's anticipated the new digital technologies will eventually take over.

Cost of tapes: blank \$2-\$10, prerecorded up to \$25.

Advantages

- Near CD sound-quality recordings are possible with the best units.

- Prerecorded tapes are plentiful and relatively cheap.

Disadvantages

- Tape hiss. Noise reduction systems exist to combat this: Dolby B halves tape noise, Dolby C improves this somewhat but can have compatibility problems with machines which lack Dolby C. A new system — Dolby S — is the newest, creeping towards digital quality. In general prerecorded tapes use only Dolby B, however.

- Problems with 'wow' due to tape speed variations.

- Sound dropouts can occur if tape is faulty.

- Poor information display and slow track finding.

hassles with the tapes themselves and with the quality of prerecorded tapes. Having tasted the convenience of compact discs, consumers want more than the old cassette player can give.

If you want to upgrade, which recording system should you buy? Don't be lured by the slight price advantage of DAT — it looks like a dead-end road for ordinary consumers. It has very high-quality sound reproduction, but DAT is already narrowing its focus away from consumers generally and towards semi-professional and studio use by musicians. Don't expect prerecorded tapes to appear.

Similarly hifi VHS (a non-digital system) is more suited to, for example, a musician working at home, because of compatibility problems between different machines. Again, there is limited prerecorded music — mostly live rock concerts or music video clip compilations.

Sony's MiniDisc offers portability as well as availability of some prerecorded music, but it lags behind DCC and DAT in sound quality. This may improve as new developments arrive. But as it's the only system to really integrate the useful features of compact disc players — track access, insertion and deletion of tracks, random play, excellent information display — it may well be the dark horse to find favour in the marketplace. And whereas tapes (including DAT and DCC) can become faulty and produce sound dropouts, you won't have this sort of hassle with MiniDisc.

DCC is the only system which allows you to play your existing cassette tapes as well as record (and play) digital tapes with CD sound quality. Although it doesn't have track access facilities like CDs, for sound quality it's the best digital recording system for the consumer so far — but wait for the price to come down if you can.

Due to the very limited amount of prerecorded material it will be some years before any of these systems will seriously threaten to replace your current CD player. □

COPYRIGHT

Bear in mind it may be a breach of copyright to record. Recent moves to place a royalty on blank audio cassette tapes and make home taping legal have failed in the courts.

Announcing The 8th CHOICE Subscriber Draw For new CHOICE subscriptions and renewals received April 1 to June 30, 1993.

STOP PRESS: The winner of the 6th Subscriber draw is Ms Melva Smith of Mt Duneed in Victoria. Congratulations!

On July 1 we'll be holding our eighth Subscriber Draw. The lucky winner will be able to choose any two products from the following tests published October 1992 to December 1992.

- | | |
|---|--|
| ☐ Notebook computers (December 1992) | ☐ Air conditioners (November 1992) |
| ☐ Handheld blenders (November 1992) | ☐ Answering machines (October 1992) |
| ☐ Cordless phones (December 1992) | |



These are products we bought for testing (we never take manufacturers' samples), so you won't be the first to turn them on or set them up. But we'll cover any service problems with a CHOICE warranty that'll match the manufacturers' — just as if you'd bought them new.

All new CHOICE subscriptions and renewals received from members and personal subscribers (including donors of gift subscriptions) by June 30 will go into the draw, unless of course you indicate you don't want to be included.

(If you're not due to renew your subscription during the period, don't worry, we'll be holding other draws during the year — your renewal notice will have the details.)

The perfect gift

Here's where you stop racking your brains for the right present. With a CHOICE of their own, your friends can make big savings (and you may get to keep your own copy!).

And every new CHOICE subscription you give or renew for someone else means an extra entry for you in the Subscriber Draw. Give two gifts, gain two extra entries. Give three, and you've tripled your chances.

Use the order form overleaf

CONDITIONS OF ENTRY

- The winner will be drawn from new subscriptions and renewals from personal subscribers (including members and donors of gift subscriptions) received April 1 to June 30, 1993. If you renew or subscribe for two years, you get two chances to win.
- Information on how to enter and prizes form part of these conditions of entry.
- Employees, and their immediate families, of the Australian Consumers' Association and its associated companies and agencies are ineligible to enter.
- Entrants must be residents of Australia.
- Applications are subject to a verification check and judge's decision is final. No correspondence will be entered into.
- The prizes will be delivered free anywhere within Australia.
- Prizes cannot be taken as cash.
- South Australian residents may enter the draw by completing the form and posting to: Reply Pad No. 13, ACA, 57 Carrington Road, Marrickville NSW 2204, without subscribing to the magazine. Only one entry per person is permissible through this method.
- Last date for receipt of entries to the draw is June 30, 1993. No responsibility accepted for lost, late or misdirected mail.
- The draw will be conducted at the office of the Consumers' Association at 10 am on July 1, 1993.
- The winner will be notified by letter and published in the October 1993 issue of CHOICE magazine.
- The promoter is Australian Consumers' Association, 57 Carrington Road, Marrickville NSW 2204. NSW Permit No. TC93/0670, VIC Raffles & Bingo Permits Board Permit No. 93/482 issued on 24/2/93, ACT Permit No. TP93/0326 issued under the Lotteries Ordinance, NT No. NT93/0241.

FOUR-YEAR INDEX

JULY 1989 — JUNE 1993

Pull this index out of your copy of CHOICE and keep it as a handy reference.

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(D) includes assessment of suitability for those with disabilities
(F) feature — general advice
(M) feature — incl. market information
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Major appliances summarised on the back page

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GRAINS & CEREALS

Nutritious and versatile, but what are they and how do you use them?

We take you on a grain tour.

GRAINS are seeds of the grass family — and we've been eating them for a very long time. Excavations have shown mankind ate wild grains about 9000 years ago. In Australia we regularly eat grains in the form of bread, breakfast cereals and pasta, but other than rice we rarely use simple cooked grains like millet or quinoa.

Cooked grains can be used in burgers and vegetarian casseroles, salads and soups, and can be used to stuff vegetables.

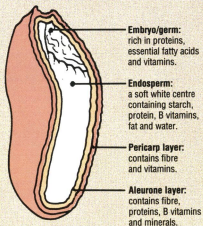
Good for us

Because they are seeds, grains contain all the nutrients a plant needs to grow. So in

their unrefined state they are very nutritious, providing protein and carbohydrates, vitamin E and many B vitamins, iron and other minerals, fat and valuable dietary fibre.

Most of the vitamins and minerals in grains are held in the germ or in the outside layers of the kernel (see diagram), which are lost when grains are milled to make them white.

Most grains are around 7% to 14% protein. This protein lacks an essential amino acid, lysine, so grains need to be combined in cooking with other foods which do contain lysine, such as soya bean products, dried peas, beans and lentils, or fish, meat and dairy foods.



Nutritional composition of raw grains and cereals

Note this table is for raw grains — when you cook them and they absorb water you'll only get a third to a half of these nutrients (and kilojoules) per 100 g.

Grain/cereal	Energy (kJ/100 g)	Protein (%)	Fat (%)	Carbohydrate (%)	Fibre (%)	Iron (mg/100 g)	Zinc (mg/100 g)	Calcium (mg/100 g)	Thiamine (B1) (mg/100 g)	Riboflavin (B2) (mg/100 g)	Niacin (B3) (mg/100 g)
BUCKWHEAT	1400	10.0	2.5	73	11	3.3	na	na	0.25	na	5.0
BURGHUL	1250	10.5	2.0	59	na	3.1	1.6	24	0.9	0.02	8.1
COUSCOURS	950	6.0	1.0	51	na	5.0	na	na	0.2	na	2.0
MILLET	1525	5.0	2.5	75	10	6.3	na	na	0.38	na	5.0
OATS, rolled	1545	11.0	8.5	62	8	3.7	1.9	45	0.53	0.14	2.8
OAT BRAN	1030	17.5	7.0	66	16	5.4	3.1	58	1.17	0.22	3.8
PEARL BARLEY	1275	8.5	2.5	61	10	2.7	0.9	22	0.68	0.06	6.9
QUINOA	1425	15.0	6.0	60	8	na	na	na	na	na	na
RICE, white	1475	6.5	0.5	79	2	0.7	1.1	7	0.08	0.02	3.6
RICE, brown	1530	7.5	2.5	77	4	1.2	2.1	11	0.35	0.05	6.2
RICE, 'instant'	1510	7.0	1.0	79	2	0.8	1.2	6	0.2	0.03	6.2
RYE	1325	10.0	2.5	65	13	3.5	na	na	0.25	na	1.3
SWEETCORN*	390	4.0	1.0	16	10	2.1	na	22	0.2	0.11	1.2
WHEAT	1400	10.0	2.5	63	10	3.8	na	35	0.14	0.08	6.8
WHEAT BRAN	655	16.5	4.5	12	45	11.9	4.7	87	0.63	0.26	26.0

na Data not available * Raw — but it won't absorb nearly as much water as the other grains.

Data gathered from: Composition of Foods Australia, 1990, Cereals and Grains; What food is that? by Jo Rogers; and the Bread Research Institute, based on data from the UN Food and Agriculture Organisation, Rome.



Rice

In Australia, rice is the only grain we eat much of as a dish in its own right. Australian consumption of rice has risen dramatically in the past decade. There are dozens of varieties on sale, but we still seem to prefer white rice. Rice also comes as flour, ground rice and noodles.



Wild rice

A new grain to this country, and not really a true rice at all. Wild rice is native to the Great Lakes region of North America and formed part of the diet of the American Indians. The black grains turn purplish once cooked, making a dramatic addition to a meal. However, wild rice is very expensive (\$24 per kg compared with about \$1.10 per kg for white rice) because it is harvested by hand. Mix it with white or brown rice to cut costs. Wild rice holds its shape better than true rice and has a distinctive bite.



Millet

Many varieties of millet are grown in Africa and Asia as a staple food. The tiny grains are normally golden but may be red, white or black. In Ethiopia a flat bread (injera) is made from millet, and elsewhere in Africa an alcoholic drink is brewed from it.

Millet can be cooked like rice — sauté it first to crack the grains. Use twice the volume of water to grain, and simmer for 30 minutes. Millet has a delicate fluffy texture and a sweet nutty taste which is enhanced by sautéing. You can serve it alone as a light alternative to rice, add it to bread dough, or use it as part of a vegetable casserole. Millet has a higher iron content than any other whole grain.



Buckwheat

This is not strictly a grain: the buckwheat plant is a relative of dock weed (dock seeds have the same pyramid shape as buckwheat grains). Buckwheat has been called beech wheat (because the shape of the grain is also like that of beech nuts) and Saracen corn — because it was thought to have been introduced to Europe by the crusaders.

Cook the grain in one and three quarters its own volume of water for 30 minutes. Buckwheat has a very distinctive smell — rather reminiscent of animal feed — and a slightly rubbery texture. You'll either love it or hate it! Because it holds its shape well, buckwheat can be added to soups and casseroles or used to stuff vegetables. Buckwheat flour is used to make Russian blinis, Japanese noodles (soba) and thin Breton crepes.



Quinoa

Quinoa (pronounced 'keen-wa') was so important to the Incas, who grew it from around 3000 BC, that their race was obliterated when the Spanish conquistadors destroyed the crop. It's not widely available in Australia yet — look for it in delis and speciality food stores. It's mainly sourced from the Americas.

Quinoa is a tiny yellow grain which is very easy to cook and to digest. The grains hold their shape well and have a pleasant taste. Toast them gently first for extra nuttiness. Cook one cup of quinoa with two cups of water for around 15 minutes and you'll get about four cups of cooked grain. It's essential to wash the grains before you use them as they are coated with a bitter natural chemical to deter birds. You can serve quinoa like rice, with added toasted almonds or water chestnuts and coriander leaves. Or you can leave it to cool, then mix it with salad dressing, herbs and chopped mint or spring onions to make a light salad dish. Washed and dried grains ground in a coffee grinder make a sweet flour which you can add to bread dough.



Barley

Barley is one of the oldest food crops, cultivated by the ancient Egyptians and also used by the Greeks and Romans. Although it is still an important food in some parts of the world, it is grown mainly for making beer and scotch whisky.

Whole barley grains need to be cooked for two hours in four times their own volume of water. They add a chewy texture to casseroles and scotch broth. **Pearl barley** has a rounder shape and has had its two outer layers removed — losing some useful minerals. It tends to lose its texture and become soft and watery during cooking. **Barley grits** are chopped grains with a shorter cooking time than whole grains. **Barley flour** can be used to make bread, or added to wheat flour to give a sweeter taste.



Rye

Rye was Europe's staple grain in the Middle Ages. The witchcraft scares of that time are sometimes attributed to the effects of a highly toxic fungus — ergot — which grows on rye and can cause hallucinations and trances. It was Dutch settlers who took rye to America, where it is now used to make rye whisky.

Rye grains can be cooked like rice but need several hours — crack them with a rolling pin first. The grains can also be sprouted. Crispy **rye flakes** have a blue-green colour and may be added to breakfast cereals or used as a topping or binder for savoury dishes. Rye has a strong savoury flavour which comes to the fore in breads — try adding fennel or caraway seeds, orange zest and molasses to the sticky dough. **Dark rye flour** is made from unhusked grain, and **light rye flour** from partially husked grain. Rye bread is popular in Northern and Eastern Europe and in parts of Russia, as well as in Australia.



Oats

Oats contain two types of fibre — insoluble and soluble. Soluble fibre is thought to help reduce blood cholesterol levels, leading to claims that oats can help prevent heart disease — but eating an oatly breakfast won't help if your other meals are full of saturated fats. (Our article *Hard to swallow* in June 1992 discussed this in greater detail.) Oats are relatively high in protein.

Whole-grain oats can be used like rice in soups and casseroles. **Rolled oats** are used in bread dough and breakfast cereals (particularly porridge and muesli), although the heated rollers that flatten them also destroy some nutrients. **Oat flakes** add a chewy texture to a crumble topping on both sweet and savoury dishes and are invaluable in biscuit making. **Oatmeal** is made by milling the grain to various degrees of coarseness. **Instant oatmeal** consists of tiny pre-cooked flakes — most of the vitamins in this kind of cereal have been added afterwards.



Wheat

Wheat is the most widely grown cereal crop. Because it has a high gluten content, wheat flour is the best for breadmaking (the gluten is stretchy and allows the dough to rise). Wheat can be bought as **whole wheat grains**, or as **cracked** or **kibbled wheat**, which takes around two hours to cook. Kibbled wheat is made from whole grains broken into pieces and can be added to breads and breakfast cereals; it has a springy texture. Used whole, wheat grains can give a chewy base to a spicy pilaf or a cold grain salad.



Corn (maize)

Maize originated in Latin America. The unripe kernels — which can be black, red, blue or violet as well as yellow — are harvested as **sweetcorn**. Yellow sweetcorn is rich in vitamins A and C. The niacin (vitamin B₃) in corn is bound and unavailable, and this has caused incidences of the niacin deficiency disease — pellagra — in societies which depend on corn for food.

Corn meal is used to make polenta, a Northern Italian porridge which can also be

sliced when cold and eaten like bread. Uncooked corn meal can also be mixed with water, egg, cheese and herbs to make dumplings to float on casseroles. **Popcorn** is made from a variety of corn with a very tough outer covering which explodes when heated. **Cornflakes** are made by cooking broken grains with malt extract, sugar, salt and water into a porridge. This is then dried and rolled into flakes, which are roasted.



Burghul

Burghul — also called Bulgar wheat or pourgouri — is made by part-cooking wheat grains until they are about to burst, then drying and grinding them. Burghul retains the germ of whole wheat, although the process does destroy some nutrients. For salads such as Middle Eastern tabouli, you just need to cook burghul in boiling water for 15 minutes. Chill the cooked grain and then toss it in a little lemon juice, lots of fresh mint and parsley, plus chopped tomatoes and onions.



Couscous

Couscous consists of coarse semolina (the ground endosperm of durum wheat) rolled into tiny balls. In North Africa this is done by hand. Couscous is quick to prepare and can be hydrated in boiling water or steamed for 30 minutes. Couscous sold in Australia is usually of the instant variety, needing only five minutes' soaking and then steaming. The little balls retain their texture but are quite soft. The name couscous is actually the name of a Moroccan dish of steamed semolina and lamb sauce. □

Adapted from *Grains and cereals* in the April 1992 issue of *Which? Way to Health*, published by the Consumers' Association, UK.

COOKING WITH GRAINS

THE BASIC METHOD for cooking all grains is to simmer them in boiling water until the water is absorbed and the grain softens.

In general one cup of whole grains gives you three cups of cooked grain. Smaller grains such as millet, buckwheat and quinoa take up more water and increase by around four times their own volume. They also cook more quickly — in about 30 minutes compared to considerably longer for whole grains such as brown rice and barley.

Tips

- Don't stir the grain as this can release starch.
- Lightly toast uncooked grains without added oil. This gives a nuttier taste and makes the grains firmer and less likely to clump together. Put the grains in an ungreased pan over medium heat, stir continuously for three to five minutes without letting them darken. Carefully add to cooking liquid and cook as usual.
- Sauté whole grains for a few minutes in a teaspoon of oil per cup of grains. This cracks the tough outer layer, allowing the grain to absorb water more easily.
- Substitute milk for water and oven cook grains slowly.
- For added flavour, use broth from cooked vegetables, stock or juice from tinned tomatoes instead of water.



Special presentations at the end of a row of supermarket shelves can cost the supplier many thousands of dollars.

THE SELLING GAME

Everyone knows supermarkets are in the business of selling. But what are they selling — food to consumers or shelf space to suppliers? In the food industry, it's a fact of life that the consumer is not the only person who pays up at the till. A supplier also has to pay a supermarket chain to stock its products through an elaborate system of fees. The obvious question is: does the supplier pass these costs on to you? Opinions are divided: "Naturally," say some. Others argue retailers make their money out of these charges. They say if the charges didn't give them profit something else would — maybe increased shelf prices?

THE SUPPLIERS



Mrs Special runs an Australian-owned small company which makes a unique product that has won the approval of customers. She has no problems with the supermarkets even though she has no money for promotions; she'll spend some money on advertising when the company grows. Meanwhile the supermarkets are pleased to help her along — they need her as much as she needs them.



Mr Big works for a multinational company whose logos are recognised worldwide. His products are market leaders. Mr Big still pays fees to the retailer but they are a drop in the ocean compared to his overall advertising budget. As far as the chains are concerned it's a love-hate relationship — he's big enough to call the shots and they need his product.



Mr Middling has no choice but to go along with the demands set by the supermarkets. His company is large enough to rely on volume sales, but while it's well known, even a household name, there are a few other companies which could probably provide a similar product just as well. He might even be competing with the store's own brand if he drops his prices too much. Because he's up there with the leading brands he has some pull at the negotiation table, but not as much as he'd like.



Mrs Squeezed works for a small, struggling company. She hates the fact she gets dictated to about promotions and price. She's got very little room to manoeuvre — it's a 'take it or leave it' situation. She'd also like to complain about treatment of stock, but fears it will backfire on her. The supermarkets are happy to work with her while she co-operates, but they'd delete her product overnight with hardly a second's thought. As she's priced her product to rely on volume sales she needs the chains to stock it.

RETAILERS have 'real estate' which they have to sell. The price depends on the activity the manufacturer undertakes — it's a negotiation process. — National account manager with a medium-sized food manufacturer.

Some say the relationship between suppliers (often manufacturers) and supermarkets is like renting shelf space: before taking the 'lease' you have to convince the retailer you will be a good tenant — that your product will sell enough at a high enough margin, and maybe even boost sales of a product type. You pay 'rent' in the form of various charges, particularly rebates explained below. You might also have to pay an upfront fee to gain access in the first place, and instead of maintenance fees for the building, you are expected to spend advertising dollars to maintain sales.

What are the charges?

The details of the 'rental agreement' are negotiated between the supplier and retailer for each 'line' — that is, for each product in a particular size and packet, and on a state by state, chain by chain basis. The exact way one supermarket chain operates — exactly which charges it makes — may differ from the next. Charges include:

■ **New line entry fees.** These are upfront fees paid when a retailer accepts a new

product. At the start of the process, when a supplier first presents a new product, the retailer might ask, "How will you support this product?" This really means, "What will you pay me to stock it and how will you promote it?" These fees are calculated in terms of different types of promotion within the store. But although the actual cost to the retailer is often minimal, the amounts paid are high. For example, a display on a gondola end — that's the space at the end of a row of shelves — could cost a supplier \$135 000 nationally for two weeks in one chain. A 'fixture special' — things like 'shelf talkers' (a ticket on the shelf next to the particular product which says "On Special" or "5% off") — might cost \$5000 nationally for the same period.

■ **Rebates** are paid on products once they are established in the supermarket and are no longer considered new lines. This is a bit like rent. For each unit sold the supplier refunds the retailer a certain percentage of its price, say 2%.

■ **'Co-op'** or co-operative advertising is money paid to the retailer by the supplier to pay for off-the-shelf activities. This might be advertising by the retailer which features the product.

■ **Specials** are paid for by the supplier in two ways. First they pay to have their product placed on special for a certain period. Second they cut their own price

to enable the retailer to pass the saving onto the consumer.

■ **Ullage** is a small percentage, maybe less than 1%, which the supplier pays the retailer for breakages and out-of-date stock — instead of agreeing to take it back. In many cases this may suit the supplier, particularly as it saves on paperwork.

■ Suppliers also pay a percentage of turnover for **warehousing**.

■ The retailer expects certain discounts for paying the supplier for stock on time. **Settlement terms** are negotiated according to credit periods: if payment is in seven days discounts are greater than if it is in 30 or 60 days.

Cards on the table

Just how much a supplier or manufacturer pays a retailer is up for negotiation. How the bargaining proceeds depends on the relative powers of the two parties — what sorts of company are involved, how unique the product is, if it's in a competitive section of the market and how much cash the supplier has for advertising — see our 'profiles' below. This must all be explained at a product presentation meeting. "The manufacturer says, 'This is what I have to offer — this advertising, this product' and the retailer says, 'This is the space you can have at this price'," as one supplier explains.

THE SUPERMARKETS



Mr Hadit has had enough of paying supermarkets to put his goods on the shelf. He can't see where his money's going and has decided to stop selling to the chains. He works on a tight margin and his accounts tell him he can't afford the sums demanded by the supermarkets — it just doesn't work for him. In a few cases consumers have demanded his product be stocked by a supermarket — it makes him smile to know in these cases the supermarkets have been forced to do business with him on his terms.



Mrs Powerful's chain has gained market share and she's throwing her weight about like never before. The company's bought up several small chains and has run a successful advertising campaign which has drawn custom. Knowing she's in a good bargaining position makes her tougher and she's picking up the profits too. She's ruffling a few suppliers' feathers, however. Behind closed doors the suppliers complain bitterly about her but are scared to complain openly; they might even try to soften her up with the odd trip to Hawaii.



Mr Listenmore is a chief buyer. His company, once the leader in its field, has had a bad run for the past few years. It needs the suppliers on its side in order to attract customers with a wide range of competitively priced goods, so he's been instructed from head office to be a little more co-operative.



Mrs Nocharge is starting a new business selling at rock-bottom prices direct to the public. To help keep costs down, she's buying products 'stripped down' (without fees). She wants to hear from suppliers fed up with coughing up thousands of dollars in fees. She's surprised how many large companies have contacted her about selling products which have been deleted from the chains' lists.

A smaller supplier might find itself being forced to advertise in ways it doesn't find profitable. One such supplier told us "There's a general expectation for promotion — in a women's magazine, TV slot or in-store. We don't mind doing the in-store promotions because they work for us, but ads in a women's magazine cost \$100 000 to \$200 000 seasonally and the returns are not immediate."

While this advertising expectation might not be expressed formally, it is how the retailer decides whether to take a particular product and on what terms.

From the retailer's point of view, it wants to ensure the supplier is committed to making the product sell. It may have quite a fixed idea of how much advertising is needed to ensure sufficient sales and justify the shelf space dedicated to it.

According to one executive, "They want to know exactly which publications, which TV program slots you'll advertise in and even how big your target audience will be, what your advertising and promotion schedule is and how you're going to sell the product to the consumer in the store."

When advertising a product to retailers in the trade press, the suppliers declare how much they will spend, when and how. The sales pitch to the supermarket sounds something like: "An ex-



tensive campaign combining 30 and 15-second commercials will generate mass awareness and trial. Live product demonstrations ... integrated public relations..." or "\$1 000 000 sizzling TV campaign launches our product ... with a provocative script and creative approach that will rival any past attention-grabbing TV commercial ..." The trade press ads might also include details of sponsorship, samplings and bus panel advertising.

Suppliers are also expected to estimate how much of the new wonder product they'll sell. "If you state a figure too high the cost of the launch (what the retailer will charge) will go up and the product will have to sell in those volumes

because the retailer has released shelf space for them. But if you put the figure too low, the retailer will say, 'Why bother?'"

Margins matter

The profit margin on a product is of utmost importance to the retailer. This may have consequences even an experienced supplier forgets at times: "We wanted to launch a sauce that was cheaper than the leading brand and under \$2. The retailer wasn't interested, not because they were concerned for the other brand, but because at the lower price our product would eat into the sales of their own brand, on which they make 40% margin compared to 20% on others."

Here to stay

Manufacturers are resigned to the fact that the charges are here to stay, but they are concerned at the way they've soared in the past few years. A survey by the Grocery Manufacturers of Australia showed the rate of increase in co-operative advertising fees was 13% compared to a CPI of 7% over the period 1983 to 1991.

Even if suppliers don't load these retailing costs onto the price of their products, consumers are likely to lose out in terms of the variety of goods in the supermarket, especially as smaller suppliers can't afford to pay up. Larger manufacturers too see research and development money fly out of the window when products aren't accepted: "We present new lines every month — a dozen maybe. Of those only the odd one gets accepted, it depends how badly the retailer wants it."

In the end, as one supplier says, shrugging his shoulders resignedly, "Grocery suppliers complain bitterly but we've brought it upon ourselves for giving in so easily. It's the ultimate free market at work."

FROM THE OTHER SIDE OF THE FENCE

CHOICE spoke to Woolworths executives to gain an insight into the retailers' point of view:

Q. How did these charges come about?

A. "It all comes back to base margins. Say we make 13% gross profit on selling products, but the cost of doing business means we need 20%. We have to have some way of closing that gap before breaking even. And then we need to make a profit. So fees such as settlement, co-op [co-operative advertising — see *What are the charges?* on page 31] and rebates are what makes the difference.

"We spend hours in negotiation with suppliers. If we could find a different way of working, we'd do it. But no-one's come up with anything.

"One positive coming out of all this concentration on negotiation is the Australian consumer gets the best deal in the world in terms of prices. The negotiation enhances competition."

Q. What do you look at when deciding whether or not to take a product? Is a

product more attractive if you can negotiate a higher charge?

A. "No. The bottom line is whether it's needed — and it must sell. If we decide to take it we have to give up space in the stores and warehouses. You can't buy your way onto the shelf, a product's got to be a goer."

Q. Some manufacturers say you are too hard, that they can't afford to pay your fees.

A. "You have to be hard sometimes. We put 1500 new products a year into our stores in NSW. And that means deleting a similar number each year. But the number of presentations we see is 10 or 15 times that figure."

Q. Manufacturers compare supermarket shelves with real estate; is this a fair comparison?

A. "We can see their point. But as far as Woolworths is concerned it's not true any more. We now manage categories of products as a whole unit — a supplier can't change its positioning."

PAINT FOR EXTERIOR TIMBER

After the first year of our latest paint endurance test we can save you money and wasted effort by telling you which ones cracked, peeled or became impregnated with dirt in such a short time.



Weathering the paints on our roof in Marrickville, Sydney — a severe test in strong sunlight and city pollution.

EXTERIOR TIMBER is a tough test of paint. The wood moves and opens up, putting strain on the cohesive properties of the paint. And the consequences can be serious if the protective barrier of the paint fails at some point, particularly if your home includes softwoods such as pine. Timber could rot and decay, leading to expensive repairs.

Here we've begun a long-distance test of exterior paints to find out which will offer the best protection to your home. We bought all nationally available exterior house paints on the market at the end of 1991 and painted them onto prepared samples of softwood (radiata pine) and hardwood (jarrah). Surface preparation was in accordance with manufacturers' instructions.

We chose three colours: white, beige

and (mission) brown. Dark colours absorb more ultraviolet radiation than do light colours; this can accelerate fading and physical deterioration. White paints suffer from colour changes such as yellowing or turning grey. Beige is somewhere in the middle.

We've been able to knock some paints off your shopping list as their painted samples already show significant physical deterioration. Sadly, the only paint sold as environmentally friendly and made from natural substances (LIVOS) failed badly in white and was only adequate in beige and brown. As it costs a lot more than regular premium paint it could be an expensive mistake to use either of the two LIVOS white paints outdoors.

DIRTY AND A-PEELING

After one year's weathering, the paints were scored on three weighted categories:

- Physical performance on hardwood panel (30%).
- Physical performance on softwood panel (40%). Softwood is more easily damaged if the paint fails.
- Colour change (30%).

Physical performance was assessed according to cracking, peeling and dirt retention. The method of assessment was based on Australian Standard AS1580-

1991, where a number from 0 (no deterioration visible at all) to 5 (total deterioration) is given for each category. We also checked for colourfastness using a spectrophotometer.

Those paints which performed poorly in one or more respects are listed in *The poor performers* on page 37. Particular problems are noted.

All those which showed no signs of physical deterioration or significant colour change are listed in *Still going strong*, on pages 36-37. At this stage we can't recommend any particular brand as it's too early in the test to be definitive. This is a progress report only, where we can begin to weed out the failures.

While you can't use the tables to choose the best paints, our *What to buy* guide shows paints which survived the 44-month exposure of our last test (reported in February 1992 CHOICE) and are also in our current test — they're still available in the formulation we tested then. It's a good bet to use them.

SPOTTING PAINT TRENDS

What conclusions can we draw after the first year of the current test?

■ Oil-based paints performed consistently well. For example, of the 50 beige paints tested only 14 were oil-based, yet 12 out of the 14 were among the group showing no physical deterioration. It

BRANDS EXCLUDED

Home (formerly Homestead) Satin Enamel paints are excluded from this test as they are not intended as a full exterior product (that is, for areas which receive full sunlight). Mitre 10 Premier Flat Acrylics have been discontinued. Bio-Products were excluded as they are varnishes.

should be noted, though, that the absolute best 19 paints in this colour were all water-based (acrylic). It was a similar picture for white and brown. Most oils did well, but the best (and worst) were usually acrylics.

■ Is gloss more durable than matt or low sheen? For the white paints those with gloss finishes generally outperformed matt and low-sheen finishes. Results were mixed among the beige and brown paints. The gloss can fade quickly outdoors, so the choice of finish may not contribute to long-term protection.

■ Colour fading can be a problem but we found little to comment on at this stage. Colour change after one year was only a problem for some of the whites, which turned either cream or greyish. The brown paints did not change signifi-

cantly, while the beige paints remained most constant of all.

■ Despite offering good protection from the elements, some paints can still fail to please if a crust of dirt impregnates easily into the surface. *The poor performers* gives results for paints suffering from this unsightly problem.

NATURAL PAINTS: FRAGRANT BUT FLAWED

This is the first time we've tested exterior paints claimed to be 'solvent-free' and environmentally friendly, with tints made from 'natural substances'. They smelt very pleasant, but failed to protect the wood. On balance, they cannot be recommended.

Despite being in the elements for only one year, both LIVOS white paints performed very poorly. LIVOS Amellos Oil Paint Solventfree (white, semi-gloss) retained dirt to a very noticeable degree despite washing, as did the beige version of this paint to a lesser extent. Results were better for brown.

LIVOS Vindo Decklack (white and brown, gloss, and oil-based rather than 'solvent-free') suffered from a different problem: cracking. The beige version was OK.

At around \$90-\$115 for a 2.5 litre can they're also very expensive.

Whereas the LIVOS paints smelt like oranges, other brands' oil-based paints smelt of solvent. However, this is obviously less important for an exterior paint than for one used indoors.

The acrylics had more variety, ranging from an ammonia-like smell to a really offensive pong (as with TAUB-MAN'S All Weather Matt — the worst of the lot according to our tester). On the whole the acrylics didn't smell as 'heavy' as the oil-based paints.

RULES OF THUMB

If you're in the paint shop on Saturday morning and you can't remember the names of the best brands, what should you buy? Are there any rules of thumb?

Though many of the best performers in the current test were acrylic paints, proportionally more of the oil-based paints were among the top group after one year. However, by the end of our last long-term test of exterior paints there was nothing to pick between oils and acrylics. As a general rule, punt on a gloss paint in a light colour, with either an oil or acrylic base.

The other warning from our last test was to avoid dark timber colours (which are used without primer or undercoat) and dark matt/low-sheen finishes, as all the brown paints of this type deteriorated badly.

Darker-coloured paints can give more problems outdoors because they absorb more destructive ultraviolet radiation than do lighter colours. Among the brown paints we noticed the poorer performers over the long term tended to physically deteriorate more on hardwood than softwood.



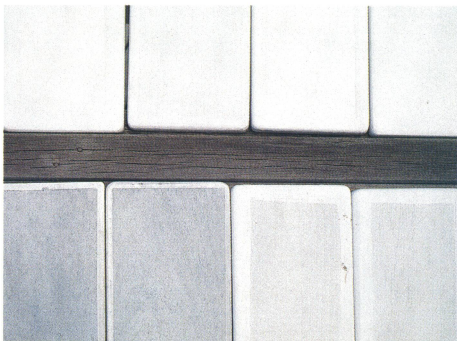
IMPROVING YOUR SUCCESS

IF YOU WANT your hard work to last as long as possible you've got to do more than buy a good paint. We all know thorough surface preparation is a vital step, but here's a couple of points you may have forgotten:

■ Don't use old acrylic paint. Unlike oil-based paints, acrylics can go off if the can was opened some months earlier. The paint gels and smells, or mould and mildew may form. Sometimes an acrylic can react with the metal and eat through the side of the can. The best tip with acrylics is to buy only what you need for the immediate job — it's a false economy to over-buy.

■ Check the can for rust — it will adversely affect performance of water-based paints. If the can is rusty on the inside when first opened, return to the shop for a refund or exchange.

■ Don't paint on a very hot or very cold day (check the can label for the recommended temperature range). If strong sunlight hits the freshly painted surface (within 30 minutes or so) the paint may begin to blister. Whites are usually not affected.



The 'environmentally friendly' Livos paints were disappointing, especially in white. You'd be unhappy if your house timber looked like the panels on the left after only a year or so (Livros Amellos Solventfree), compared with most other white paints (top). You also wouldn't be pleased if the paint cracked badly in that time (Livros Vindo Decklack, right).

WHAT TO BUY — SO FAR

After only one year into this test it's too early to recommend any particular brand, as failure may be just around the corner. However, we can tell you which ones are poor performers already, thereby eliminating a degree of unnecessary risk (see *The poor performers* overleaf). As we watch the remaining paints we'll report regularly on their progress. The next instalment is due in about two years' time.

We have listed below the best-performing paints still available from our previous test (and going strong so far in the current test) — all had remained sound after 44 months of hard weathering. As all performed equally well they're listed in alphabetical order. We've checked these paints are still available in the formulations we tested.

We picked beige instead of cream for our current test as it's more of an intermediate colour, but this means we can't make any recommendations for beige-type colours yet.

As paint prices vary enormously with discounts and special offers, we can't give any useful price information. We suggest you take this list of recommended products with you when you buy, and choose the cheapest of them that's available in the colour you want.

WHITE PAINTS

- BRISTOL Supreme Gloss Enamel (O)
- BRISTOL Weather Tough Gloss Exterior Acrylic (W)
- DULUX Weathershield Exterior Low Sheen Acrylic (Vivid White) (W)
- MITRE 10 Premier Gloss Acrylic (Super White) (W)
- PERFORMER Interior & Exterior Gloss (O)
- PERFORMER Solarshield Exterior Gloss (W)
- SUPERFLOW Gloss Enamel (O)
- WALPAMUR Acrylic Flat for Exterior Use (W)
- WATTYL High Gloss Enamel (O)
- WATTYL Weathercare Gloss Acrylic (W)

CREAM PAINTS

- BRISTOL Supreme Gloss Enamel (Honey Hue) (O)
- DULUX Weathershield Exterior Low Sheen Acrylic (Warm White) (W)
- PASCOL High Gloss Enamel (Desert Sand) (O)
- PERFORMER Solarshield Exterior Gloss (Oyster White) (W)
- SUPERFLOW Gloss Enamel (Soft Cream) (O)
- WALPAMUR Acrylic Flat for Exterior Use (Off White) (W)
- WATTYL High Gloss Enamel (Federation Cream) (O)
- WATTYL Weathercare Gloss Acrylic (Federation Cream) (W)

BROWN PAINTS

- DULUX Weathershield Exterior Gloss Acrylic (Mission Brown) (W)

O — Oil-based W — Water-based

SOME REFLECTIONS ON 'INSULATING PAINT'

SEVERAL COMPANIES are now selling insulating paint, claimed to keep indoor temperatures down by as much as 15°C — but recent CSIRO tests show they are no better than ordinary white paint.

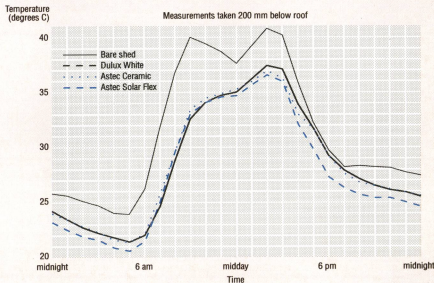
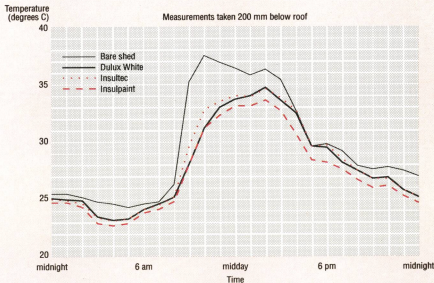
■ "The difference ... up to 15° and more cooler. Because **INSULTEC** stops the heat entering in the first place it either eliminates the need for air conditioning or greatly reduces its running costs." [Insultec brochure].

■ "CCA's insulating paints and coatings [containing ceramic particles] function much the same as NASA's [space shuttle] borosilicate coating." [Astec brochure]

Graphs, illustrations and technical references are used to support the performance claims. It's a convincing sell.

The CSIRO tested claims like this at its Brisbane premises over a 12-month period. Four 'insulating' paints (white) were painted onto separate metal garden sheds, along with two 'controls': ordinary **DULUX Weathershield** paint and an unpainted shed. Electronic sensors were placed 200 mm under each roof and temperatures inside (and outside) were recorded.

The two graphs tell the story: there is no significant difference between any of the five insulating paints and ordinary exterior white **DULUX**. However, a light-coloured painted metal roof will keep you cooler than an unpainted one.



STILL GOING STRONG

Paints which had not deteriorated after one year's weathering. Don't buy from this list yet — see *What to buy* on page 35.

Brand/product (in alphabetical order)	Colour	Paint base
WHITE PAINTS		
BERGER Exterior Solarscreen Gloss	White	Water
BERGER Exterior Solarscreen Low Sheen	White	Water
BERGER Full Gloss Brilliant Enamel Interior-Exterior	Super White	Oil
BIG W Style Exterior Gloss Acrylic	White	Water
BIG W Style Interior-Exterior High Gloss Enamel	White	Oil
BRISTOL Premium Low Sheen Timber Coat	White	Water
BRISTOL Supreme Gloss Enamel	White	Oil
BRISTOL Weather Tough Gloss Exterior Acrylic	White	Water
BRITISH PAINTS Glossy Exterior Walls and Trim	White	Water
BRITISH PAINTS Low Sheen Exterior Walls	White	Water
BRITISH PAINTS Self-undercoating Full Gloss	White	Oil
DULUX Interior/Exterior High Gloss Enamel	Vivid White	Oil
DULUX Weathershield Exterior Gloss Acrylic	Vivid White	Water
DULUX Weathershield Exterior Low Sheen Acrylic	Vivid White	Water
GALLERY Gloss Acrylic	White	Water
GALLERY Gloss Enamel	White	Oil
HOME Exterior Acrylic Gloss	White	Water
HOME Super Gloss	White	Oil
HOME Vinyl Matt	White	Water
HOME Vinyl Satin	White	Water
MITRE 10 Premier Gloss Acrylic	White	Water
MITRE 10 Premier Gloss Enamel	White	Oil
MITRE 10 Premier Satin Acrylic	White	Water
PASCOL Gloss Acrylic	White	Water
PASCOL High Gloss Enamel	White	Oil
PERFORMER Interior & Exterior Gloss	White	Oil
PERFORMER Solarshield Exterior Gloss	White	Water
SOLVER Duraguard Low Sheen Acrylic	White	Water
SOLVER Exterior 100% Acrylic Gloss Weatherflex	White	Water
SOLVER High Gloss Enamel Interior-Exterior	White	Oil
SUPERFLOW Gloss Acrylic	White	Water
SUPERFLOW Gloss Enamel	White	Oil
TAUBMANS All Weather Matt	Brilliant White	Water
TAUBMANS Sunproof Gloss	Brilliant white	Water
WALPAMUR Acrylic Flat for Exterior Use	White	Water
WALPAMUR Long Life Gloss Enamel for Interior/Exterior use	White	Oil
WATTYL High Gloss Enamel	White	Oil
WATTYL Weathercare Gloss Acrylic	White	Water

Brand/product (in alphabetical order)	
BEIGE PAINTS	
BERGER	Exterior Solarscreen Low Sheen
BRISTOL	Supreme Gloss Enamel
BRITISH PAINTS	Glossy Exterior Walls and Trim
BRITISH PAINTS	Low Sheen Exterior Walls
BRITISH PAINTS	Self-undercoating Full Gloss
DULUX	Interior/Exterior High Gloss Enamel
DULUX	Weathershield Exterior Gloss Acrylic
DULUX	Weathershield Exterior Low Sheen Acrylic
GALLERY	Gloss Acrylic
GALLERY	Gloss Enamel
HOME	Exterior Acrylic Gloss
HOME	Exterior Acrylic Low Gloss
LIVOS	Vindo Decklack (Gloss)
MITRE 10	Premier Gloss Acrylic
MITRE 10	Premier Gloss Enamel
MITRE 10	Premier Satin Acrylic
PASCOL	Gloss Acrylic
PASCOL	High Gloss Enamel
PERFORMER	Interior & Exterior Gloss
PERFORMER	Solarshield Exterior Gloss
PERFORMER	Solarshield Exterior Low Sheen
SOLVER	Duraguard Low Sheen Acrylic
SOLVER	Exterior 100% Acrylic Gloss Weatherflex
SOLVER	High Gloss Enamel Interior-Exterior
SUPERFLOW	Gloss Acrylic
SUPERFLOW	Gloss Enamel
TAUBMANS	All Weather Matt
TAUBMANS	Sunproof Gloss
WALPAMUR	Acrylic Flat for Exterior Use
WALPAMUR	Gloss Acrylic for Exterior Use
WALPAMUR	Long Life Gloss Enamel for Interior/Exterior Use
WATTYL	High Gloss Enamel
WATTYL	Weathercare Gloss Acrylic
BROWN PAINTS	
BERGER	Full Gloss Brilliant Enamel Interior-Exterior
BRISTOL	Premium Low Sheen Timber Coat
BRISTOL	Supreme Gloss Enamel
BRITISH PAINTS	Glossy Exterior Walls and Trim
BRITISH PAINTS	Low Sheen Exterior Walls
BRITISH PAINTS	Self-undercoating Full Gloss
DULUX	Interior/Exterior High Gloss Enamel
DULUX	Weathershield Exterior Gloss Acrylic
DURALEX	New Generation Aquanamel Gloss Acrylic
HOME	Exterior Acrylic Gloss
HOME	Exterior Acrylic Low Gloss
HOME	Super Gloss
LIVOS	Amellos Oil Paint Solventfree (Gloss)
PASCOL	High Gloss Enamel
SOLVER	Exterior 100% Acrylic Gloss Weatherflex
SOLVER	High Gloss Enamel Interior-Exterior
WATTYL	High Gloss Enamel

OUR TEST

Preparation of panels: Paint was applied on 300 mm x 140 mm test panels made of softwood (radiata pine) and hardwood (jarrah), which had their surfaces prepared according to manufacturers' instructions regarding primers and undercoats (if required), as well as the number of coats of paint (usually two, but three in the case of **LIVOS** Decklack paints).

The panels were placed on the roof of our premises at Marrickville in Sydney to be exposed to weathering. They were placed at an angle of 45° and facing north, and were checked at regular intervals. This is likely to be a more severe test of the paints than for a similar period on your home.

After one year on the roof the panels were taken down, cleaned superficially, checked for physical deterioration and scored.

THE POOR PERFORMERS

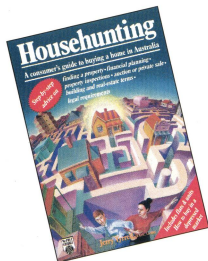
Paints which deteriorated after one year's weathering.

Areas of failure: D – dirt retention; C – cracking; P – peeling; s – on softwood; h – on hardwood.

Colour	Paint base
Doe Hide	Water
Trade Winds	Oil
Nougat	Water
Nougat	Water
Beige	Oil
Buckwheat	Oil
Buckwheat	Water
Buckwheat	Water
Beige Colour	Water
Nougat	Oil
Lowell	Water
Lowell	Water
Ivory	Oil
Bathurst Beige	Water
Bathurst Beige	Oil
Bathurst Beige	Water
Moccasin	Water
Moccasin	Oil
Kestrel	Oil
Kestrel	Water
Kestrel	Water
Tucker Box	Water
Tucker Box	Water
Tucker Box	Oil
Meranti	Water
Kestrel	Oil
Bathurst Beige	Water
Bathurst Beige	Water
Stoney Bay	Water
Stoney Bay	Water
Stoney Bay	Oil
Lowell	Oil
Lowell	Water
Mission Brown	Oil
Mission Brown	Water
Mission Brown	Oil
Mission Brown	Water
Old Mission Brown	Oil
Mission Brown	Oil
Mission Brown	Water
Mission Brown	Water
Mission Brown	Oil
Mission Brown	Water
Mission Brown	Water
Burned Umber	'Natural oil'
Mission Brown	Oil
Bungalow Brown	Water
Bodega Brown	Oil
Mission Brown	Oil

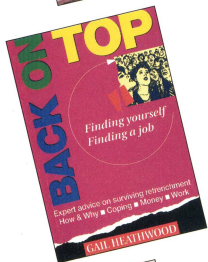
Brand/product (in alphabetical order)	Colour	Paint base	Areas of failure
WHITE PAINTS			
BRISTOL Weather Tough Low Sheen Exterior Acrylic	White	Water	D, C (s)
DURALEX Colonial Acrylic Co-polymer Flat House Paint	White	Water	D
DURALEX Exterior/Interior Long Life Acrylic Flat	White	Water	D
DURALEX Exterior/Interior Long Life Acrylic Low Sheen	White	Water	D
DURALEX Exterior/Interior Long Life Acrylic Satin	White	Water	D, C (h)
DURALEX New Generation Aquanamel Gloss Acrylic	White	Water	D
HOME Exterior Acrylic Low Gloss	White	Water	D
LIVOS Amellos Oil Paint Solventfree (Semigloss)	White	'Natural oil'	D
LIVOS Vindo Decklack (Gloss)	White	Oil	C (h&s)
PASCOL Matt Acrylic	White	Water	D
PERFORMER Solarshield Exterior Low Sheen	White	Water	D
SOLVER Acrylic Low Gloss Weatherflex	White	Water	D
TAUBMANS Sunproof Satin Colour	White	Water	D
TAUBMANS Timbertop Colour	White	Water	D, C (h)
WALPAMUR Gloss Acrylic for Exterior Use	White	Water	D
WATTYL Vinasheen Low Gloss Vinyl	White	Water	D, C (h&s)
WATTYL Weathercare Flat Acrylic	White	Water	D
BEIGE PAINTS			
BERGER Exterior Solarscreen Gloss	Doe Hide	Water	C (h)
BERGER Full Gloss Brilliant Enamel Interior-Exterior	Doe Hide	Oil	D
BRISTOL Premium Low Sheen Timber Coat	Trade Winds	Water	D
BRISTOL Weather Tough Gloss Exterior Acrylic	Trade Winds	Water	D, C (s)
BRISTOL Weather Tough Low Sheen Exterior Acrylic	Trade Winds	Water	D, C (s), P (s)
DURALEX New Generation Aquanamel Gloss Acrylic	Acorn	Water	D
HOME Super Gloss	Lowell	Oil	C (s)
HOME Vinyl Matt	Lowell	Water	D, C (h)
HOME Vinyl Satin	Lowell	Water	D, C (h)
LIVOS Amellos Oil Paint Solventfree (Semi-gloss)	Ivory	'Natural oil'	D
PASCOL Matt Acrylic	Moccasin	Water	D
SOLVER Acrylic Low Gloss Weatherflex	Tucker Box	Water	D
TAUBMANS Sunproof Satin Colour	Bathurst Beige	Water	D
TAUBMANS Timbertop Colour	Bathurst Beige	Water	D, C (s)
WATTYL Vinasheen Low Gloss Vinyl	Lowell	Water	D, C (h)
WATTYL Weathercare Flat Acrylic	Lowell	Water	D, C (s)
BROWN PAINTS			
BERGER Exterior Solarscreen Gloss	Mission Brown	Water	C (s)
BERGER Exterior Solarscreen Low Sheen	Mission Brown	Water	C (s)
BRISTOL Weather Tough Gloss Exterior Acrylic	Mission Brown	Water	C (s)
DULUX Weathershield Exterior Low Sheen Acrylic	Mission Brown	Water	C (s)
LIVOS Vindo Decklack (Gloss)	Umbra	Oil	C (s)
PERFORMER Interior & Exterior Gloss	Mission Brown	Oil	C (s)
SOLVER Acrylic Low Gloss Weatherflex	Bodega Brown	Water	C (s)
SOLVER Duraguard Low Sheen Acrylic	Bodega Brown	Water	C (h)
TAUBMANS All Weather Matt	Red Cliffs Brown	Water	C (s)
TAUBMANS Sunproof Gloss	Mission Brown	Water	C (s)
TAUBMANS Sunproof Satin Colour	Mission Brown	Water	C (s)
TAUBMANS Timbertop Colour	Mission Brown	Water	C (s&h)

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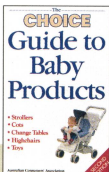
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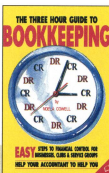
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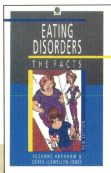
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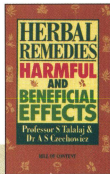
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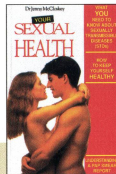
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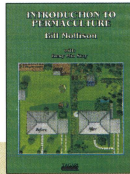
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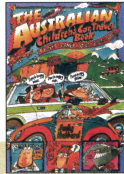
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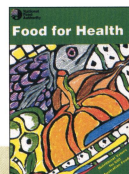
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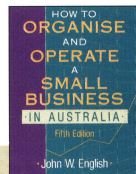
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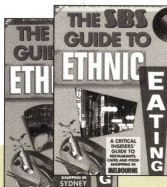
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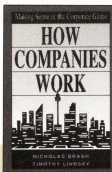


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ELECTRIC MULTI-FUNCTION WALL OVENS

A multi-function oven will not necessarily cook any better than an ordinary fan-forced oven — but if it does perform well it's a lot more convenient.

IF YOU'RE into cooking, a multi-function oven may be just the thing. But before you rush out and replace the oven you've got (especially if it already uses fan-forced technology) consider whether the extra convenience will be worth the extra money; most of the ovens we tested cost well over \$1000.

Anyone looking for an ideal oven would first of all choose one which had a top element in addition to the normal bottom or rear element. This lets you brown the top of, say, a shepherd's pie quickly without baking the rest of the dish, and without having to take it out of the oven to put under the grill.

Next, you'd want to look for an oven which also had a fan to move the hot air around. This is called fan-forced (if the fan has its own heating element — a sort of hairdryer effect) or fan-assisted (if the fan is separate). A fan distributes the heat more evenly and gives a faster cook-

ing time. For example, a sponge cake cooked in an oven with the fan on can take three minutes less and be cooked on a slightly lower heat than if it were cooked conventionally.

Theoretically, the even distribution of hot air also means you can use the whole of your oven to cook different things at the same time. See *Know your oven* for more on oven technology.

Naturally, you would want all these functions to operate independently. You wouldn't always want to use the fan, for instance, because the constantly moving air can have a drying effect — great for biscuits and pastries which need crisping, but not for delicate moist foods, such as custard tarts.

Breads and pizzas need a very hot oven — two elements and a fan working together give a crisper finish to the dough base than does a single element, and browns the top at the same time.

Only a multi-function oven can give you all these options. Whereas a conventional oven gives you one or two elements and perhaps a grill, it has no fan; and a fan-forced oven has a fan but cooks without direct heat (the element is concealed). A multi-function oven gives you a choice of at least two elements *and* a fan. If the fan is used with the in-oven grill element ('fan grill'), the effect is akin to using a rotisserie — except that the heat moves around, not the food.

The market indications are that multi-function ovens are becoming the oven of choice. So how well do they perform, and how do they compare with one another?

COOKING PERFORMANCE

The ovens we bought for testing cost us between \$1000 and \$1800, which is where the greatest share of the market lies. Most were fan-forced, and all but one (the CHEF, which has a separate grill)

KNOW YOUR OVEN

Fan-forced: A fan blows air over a concealed heated element at the rear. The hot air is then circulated around the oven, resulting in an even heating of the entire oven. This means all the shelves can be used at once and still produce food which is evenly cooked.

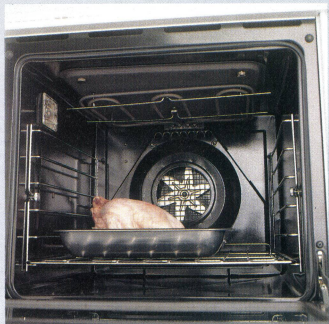
Fan-assisted: Different from a fan-forced oven in that the oven usually has a bottom and top element and a separate fan. The fan circulates the air heated by the top and bottom elements to ensure the oven is evenly heated. According to some manufacturers, this system can result in hot spots in the oven from radiant heat.

Fan-assisted grilling ('fan grill'): Sometimes incorrectly referred to as fan-forced grilling, this style of grilling takes the place of a rotisserie: instead of the food rotating, the heat circulates. Food is baked and grilled at the same time.

Convection: Another term for describing a fan-forced oven (sometimes 'fan convection'). This term is often confused with 'conventional' — a conventional oven does have convection currents in the sense of hot air rising, but not to the same extent as a fan-forced oven.

Conventional: This is the old style of oven with an element on the bottom — although some also have a top element for browning and grilling instead of having a separate grill.

Multi-function: This defines any oven which is fan-forced or fan-assisted and has at least one element in addition to the concealed bottom or rear element. This means the user can have the best of both worlds (fan-forced or conventional) with the flick of a switch. One thing industry sources agree on is that multi-function ovens are the trend for the future.



As well as the exposed top element, this oven has a concealed rear and bottom element and a fan which blows over the rear element to help circulate the hot air (fan-forced).

featured an additional top element.

Staff ate well as our tester cooked toast and chops under the grill, and baked sponges, meringues, scones, custard tarts, pizzas, chickens and fruit cakes in the oven.

Results varied but for most of the foods the fan mode produced better results because the hot air was kept circulating between shelves.

Cooking without the fan (conventional mode) generally produced the best custard tarts and fruit cake. The custard tarts cooked conventionally generally had a smooth and slightly shiny surface, whereas those cooked with the fan ended up with a ruffled and slightly matt look.

We didn't find any advantages in roasting chicken using the in-oven grill plus the fan ('fan grill') — with the ex-

ception of the SMEG, which worked particularly well in this mode.

USING THE GRILL

For most ovens, getting to the back of the grill trays to see how the food was cooking could not be done without risking a burn. For some ovens it was easier simply to remove the tray from the grill.

While all the grill units showed varying degrees of uneven browning, most of them would be able to grill small quantities of toast and chops satisfactorily.

The better results were generally produced with smaller grill trays and in the centre of larger trays, which tended not to let food cook evenly along the outside edges. The front row was usually the worst affected because of insufficient heat.

VISIBILITY

There's no point having a glass panel in an oven door if you can't see through it. The amount of visibility varied with the patterns of each door (see photos) — some had vertical lines (the worst), some

horizontal lines, some had dots and some had clear glass. The easiest doors to see through were those on the BLANCO, BOSCH and SMEG.

The ovens which required the door to be closed for in-oven grilling made it even harder to see inside because of the condensation on the glass. This meant constantly opening and shutting the door to see what was going on. Having the door closed may have reduced the amount of splattering outside the oven, but it also slightly increased the amount of inside cleaning required — unless the oven had self-cleaning panels.

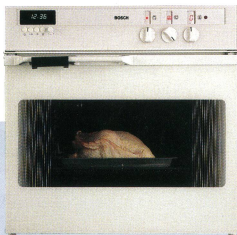
While we're talking about doors, we found the best handle to use is the D shape, with enough depth to ensure you don't burn your knuckles on the door when you grasp it.

PREHEATING

An oven should not take longer than 25 minutes to reach 235°C above room temperature (which in our lab meant reaching 260°C) — most took around 20 min-

PROFILES

Ovens are listed in rank order. Prices shown indicate the range found in nationwide checks in April 1993.

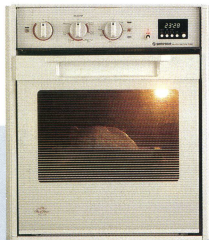


BOSCH

Price: \$1625/\$1769

Good points

- One of the three easiest ovens to use. The shelves slid out smoothly (but there's no safety stop to prevent them being accidentally pulled right out), and were stable — they didn't tilt down when a reasonable load was placed on them.
 - Best grill results of the ovens tested.
 - Good controls. Large, well spaced knobs with crossbar grip; the functions clearly labelled and easily understood. The temperature control knob with pointer enabled easy and accurate setting.
 - The easiest oven to wipe clean, with self-cleaning catalytic liner panels.
 - Door easy to open.
 - Easy to program.
 - Large clear cursors on digital display.
 - Good troubleshooting guide.
- Bad points**
- Grill tray tilts downward when pulled out; handle not secure with large heavier loads such as chops.



SIMPSON

Price: \$885/\$1059

Good points

- With the WESTINGHOUSE, cheaper than the other top scorers.
 - One of the three easiest ovens to use.
 - Grill easy to clean.
 - Clear digital display.
 - Controls well labelled.
 - Large clear illustrations in instructions, good troubleshooting guide.
 - Made the best sponge cakes by far (though still not judged 'ideal').
- Bad points**
- Difficult to set the oven temperature accurately.
 - Grill tray difficult to slide out smoothly; hard to see during cooking; no handles.
 - Failed the door strength test. Although the door hinge itself wasn't damaged, the door could not be closed properly after the mandatory 25 kg weight was taken off. However, this is much heavier than any weight that would normally be placed on an open oven door.

**BEST
BUY**

utes. The quickest was the CHEF Integra which took only 13 minutes. The slowest were the ST GEORGE and the WHIRLPOOL, which both took around 28 minutes.

The BLANCO could not even reach the required temperature, falling about 30°C short.

CLEANING

The smaller grill trays and those with a flatter grid were easier to wash in the average kitchen sink. The larger BLANCO and SMEG grill trays were the hardest to clean, mostly because of the many fine wires in the rack.

The ovens which feature self-cleaning catalytic liner panels (panels coated with a special enamel which helps the oven clean itself by a combination of high heat and oxidation) were especially easy to clean — see the table and profiles for details. You just have to wipe the inside to remove any remaining debris. Some manufacturers fit these panels as an optional extra.

Check to see the oven door and shelf supports are easy to remove, and that the door and control panels are smooth. If an oven has awkward angles around the exposed bottom element, moulded shelf channels or narrow slots in the door and fan outlets it will be more difficult to clean.

WHAT TO BUY

All but the SMEG scored well for cooking performance (though the ROSIERES fell down on grilling), and while all were OK for ease of use the top six in our table (see overleaf) were clearly ahead of the rest.

Most cooking problems are likely to be overcome by trial and error as you get to know your oven's good and bad points, but ease of use is another matter — inconvenience and poor design are not going to go away. The selling point for multi-function ovens is 'convenience', and when some ovens do well in this regard we don't see why you need to put

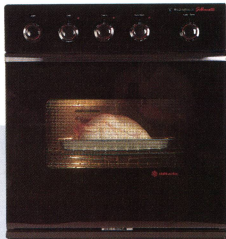
up with any with a lower score — particularly because these ovens are not cheap.

The least user-friendly ovens were the ROSIERES and the SMEG. With both ovens retailing around \$1500-\$1800 we suggest you buy something else. The CHEF wasn't much better, but is at least cheaper.

The SMEG was well behind its nearest contender for cooking performance too, and is not recommended. The manufacturer says the model is being superseded, but our market research indicates it may still be available for some time, so we've kept it in our report.

The SIMPSON and WESTINGHOUSE seem to be particularly good value for money (around \$900-\$1000) — especially as both scored well for ease of use and cooking performance. An extra plus is that both ovens are made in Australia.

We recommend you read the profiles of the top six models carefully and choose the one that suits you best from them.



WESTINGHOUSE

Price: \$861/\$1019

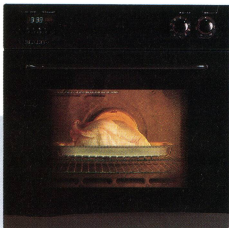
Good points

- With the SIMPSON, cheaper than the other top scorers.
- Grill easy to clean.
- Controls easy to use.

Bad points

- No clock.
- Grill tray hard to slide smoothly; can't see food while cooking; no handles.
- Visibility through the oven door slightly awkward.
- Limited timer functions; mechanical auto-timer difficult to set accurately. Alarm consists of only a single 'ping'.
- Only has automatic timer switch-off; the other ovens also have auto switch-on.
- Replacement of the light bulb would be difficult.

**BEST
BUY**



BLANCO

Good points

Price: \$1480/\$1849

- Self-cleaning oven.
- Separate controls for the top and bottom elements.
- Overall, one of the two easiest grills to use.
- Meat probe to detect automatically when a joint is cooked.
- Fifteen shelf positions.
- Minute timer automatically switches oven off.

Bad points

- Couldn't reach the required temperature of 260°C in the heat-up test; the highest temperature it could reach was around 227°C.
- Highest heat loss of all the ovens tested.
- Difficult to see display cursors if not at eye level.
- Timer difficult to set independently when oven on.
- Grill difficult to clean.

ELECTRIC MULTI-FUNCTION WALL OVENS

FEATURES

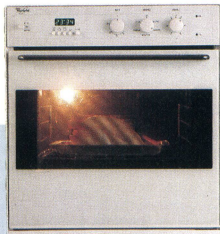
1					2	3	4			5
Brand/model (in rank order)	Manufacturer/ distributor	Origin	Warranty	Price (\$)*	Self- cleaning	Defrost mode	Meat probe	No. of shelves	No. of shelf positions	Full half
BOSCH HBE632TAU/01	Robert Bosch	Germany	1 year	1625/1769	✓			2	5	
SIMPSON 68-912*01	Email	Australia	1 year	885/1059		✓		3	5	✓
WESTINGHOUSE POE666MFBK*00	Email	Australia	1 year	861/1019		✓		3	5	✓
BLANCO BMS601	Blanco	Italy	not stated (B)	1480/1849	✓	✓	✓	3	15	✓
WHIRLPOOL 6MFOS	Whirlpool	Australia	2 years	1260/1599		✓		2	6	
ST GEORGE UEO-6	St George Appliances	Australia	2 years	1315/1570		✓		2	6	
CHEF Integra EWOBIAMFW	Craig and Seeley	Australia	1 year	799/958		✓		3	5 + 3 in grill	✓
ROSIERES FE7430	Rosieres	France	2 years	1495/1779				2	4	
NOT RECOMMENDED										
SMEG SA600 (A)	Omega Appliances	Italy	2 years	1554/1899	✓	✓		2	4	

* Prices shown indicate the range found in nationwide checks in April 1993.

(A) The Smeg SA600 has now been superseded but may still be available in some stores.

(B) Distributor advises one-year warranty.

(C) This oven could not achieve the temperature required in our test — see Preheating on page 42.



WHIRLPOOL

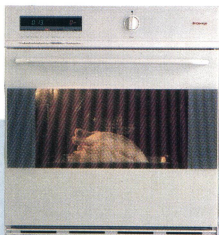
Price: \$1260/\$1599

Good points

- One of the three easiest ovens to use. The shelves slid out smoothly and had a safety stop to prevent them being accidentally pulled right out; they were stable, and didn't tilt downwards when a reasonable load was placed on them.
- Grill was one of the top two scorers for ease of use.
- The door was easy to open.
- Large D-shaped handles were easy and cool to grip.
- Large well spaced knobs.
- Clear digital display.
- Easy to program.
- Instruction booklet easy to use, simple, with good illustrations.

Bad points

- One of the slowest ovens to heat to 260°C, taking nearly 28 minutes.
- Hard to set the oven temperature accurately.
- The grill deflector plate deformed with heat during testing.
- Difficult to access rear of grill tray.



ST GEORGE

Price: \$1315/\$1570

This oven differs from the others in that it has small pushbuttons which are highlighted on the digital display; although unusual, it was easy to operate. Its temperature control knob works only when one of the various oven modes is on, and the settings are very clearly shown on the digital display.

Good points

- Easy to program.
- Large clear digital display.
- High-bake mode, which cooks with the bottom element and the fan, is very useful for quick preheating and cooking foods such as pizzas and pastries which require fast, high heat.

Bad points

- Awkward to engage grill tray on the shelf runners; difficult to access rear grill row; hard to see during cooking because of condensation on the oven door; no handles.
- The slowest oven to heat to 260°C, at 29 minutes.

PERFORMANCE

	6	7	8	9	10	
oven heat-up (minutes)	Oven cooking score (%)	Grill cooking score (%)	Total cooking score (%)	Ease of use score (%)	Overall score (%)	Brand/model (in rank order)
21	78	78	78	75	77	BOSCH HBE632TAU/01
20	77	65	74	73	74	SIMPSON 68-912*01
18	79	58	75	71	73	WESTINGHOUSE POE666MFBK*00
(C)	77	65	75	70	72	BLANCO BMS601
28	71	58	68	74	71	WHIRLPOOL 6MFOS
29	70	53	67	71	69	ST GEORGE UEO-6
13	68	65	67	62	64	CHEF Integra EWOBIAFW
16	74	45	68	60	64	ROSIERES FE7430
21	63	38	58	59	58	SMEG SA600

1 MODEL NAMES

Many manufacturers call all their oven models by the same name — for example, the name Westinghouse Silhouette covers all kinds of oven. If you want one of the ones we've tested, make sure you ask for a multi-function oven, and quote the model number we've given in the table.

FEATURES

2 SELF-CLEANING

The panels are coated with a special enamel which helps the oven clean itself by using a combination of high heat and oxidation. The ovens should then require just a wipe over to remove any debris. Some manufacturers provide self-cleaning panels as an optional extra.

3 DEFROST MODE

In most models this means operating a fan without heat. It's not necessarily the best way to defrost food — if you have a microwave oven it would almost certainly be quicker.

4 MEAT PROBE

A meat probe is claimed to accurately control the cooking of meat by eliminating the need to weigh it and calculate the cooking time. It is inserted into the food to be cooked (usually a large piece of meat — it's not recommended for use on chickens because of the large amount of bone), the desired internal temperature is programmed into the oven, and the method (with or without the fan) also registered. Once the internal temperature of the meat reaches the desired temperature the oven switches itself off.

It's debatable whether a meat probe is a reliable method of cooking control because so much seems to depend on the

position of the probe, and whether you like your meat rare or well-done. The experience of the cook will be a factor in how successful the probe is.

5 FULL AND HALF GRILL

This facility allows you to cook using one half of the grill only — useful for cooking small quantities.

PERFORMANCE

6 OVEN COOKING SCORE

We cooked a variety of foods with and without the fan (see *Cooking performance* on pages 41-42) and assessed the results against what we considered to be ideal. The score is the average of the two results for fan and conventional cooking.

7 GRILL COOKING SCORE

We used the grill to cook chops and toast. The score is a reflection of the evenness of the cooking.

8 TOTAL COOKING SCORE

This comprises the scores for oven and grill cooking. Cooking performance made up 50% of the overall score: conventional 20%, fan 20%, and grilling 10%.

9 EASE OF USE

The ovens were assessed for ease of use based on the quality of their instructions, the controls, using the oven and grill units, and how easy they were to clean.

10 OVERALL SCORE

Since the selling point of these multi-function ovens is convenience and choice, we thought ease of use should represent 50% of the overall score. The other 50% is the total cooking score (column 8), based on the grill and oven cooking performances.

FOR PEOPLE WITH DISABILITIES

An occupational therapist from the Independent Living Centre assessed these ovens on behalf of people with disabilities. When choosing an oven the main things to look for include:

- The oven door should ideally open sideways to enable easy access for people in wheelchairs. (All the ovens we tested had a downward-opening door.)
- The door should not be too heavy or too stiff to pull open, and should stay open without being held.
- Control knobs should be large, with an easy-to-grip raised crossbar. Pushbuttons should be large, spaced well apart and easy to push.
- Door handles should be large and D-shaped; as for all users, the depth should be enough to prevent the risk of burning one's knuckles on the door.
- There should be good visibility through the door, and large, easy-to-read (contrasting colours) numbers and diagrams on the controls and digital display.
- The grill unit should not be too heavy or difficult to operate.

The ovens considered most convenient for people with disabilities were the **BOSCH** and the **SIMPSON**. The **BLANCO** was considered almost as good except the oven door was slightly stiff and the diagrams on the control knobs could be difficult to see. While most of the units can be installed at a height to suit the user, the **CHEF** with its separate grill could be difficult to install so that both it and the controls were easy to reach.

FOUR-YEAR INDEX

JULY 1989 — JUNE 1993

MAJOR APPLIANCE SUMMARY

Turn to page 23 for the full four-year index.

(T) test

(D) includes assessment of suitability for those with disabilities

(F) feature — general advice

(M) feature — incl. market information

(S) subscriber survey or user trial

(L) letter

(U) update of previous report

* additions or corrections to reports

♦ scheduled for publication within next 12 months.

Air conditioners

reverse-cycle Oct 89(T), Nov 92(T,D)
split-system reverse-cycle Dec 90(T)

Audio equipment

buying hifi components Apr 92(F)
car CD players ♦
car radio/cassette players Jun 92(T)
cassette decks, single and twin-well for \$399 Jul 91(T,D)
CD players Apr 90 (T,D)
CD players, multi-disc Mar 93(T)
personal stereos Dec 91(T,D)
radio/cassette players Feb 90(T)
tuner/amps Jul 90(T,D)

Clothes dryers Jun 91(T,D), Mar 92(T,D) ♦

Communications

answering machines Oct 92(T)
cellular phones Jul 92(T,D)
fax machines Jan 92(T)

Computers

buying your first Nov 90(F)
notebook Dec 92(T)
personal Aug 91(T), Oct 91(U)
printers Nov 90(T), Mar 93(T), May 93*

Cooktops, choosing

Jan 92(M)

Dishwashers

Mar 90(T,D)

Apr 91(T,D), Jul 91(U), Feb 93(T,D) ♦

Evaporative air coolers

Oct 91(T,D)

Freezers

around 200 L Aug 89(T)
small Jul 90(T,D)

Heaters

fan (electric) May 90(T,D) ♦
gas, flued Apr 93(T,D)
gas, non-flued Apr 92(T)
radiant (electric) May 91(T)

Lawnmowers

electric Nov 91(T,D), Feb 92(T,D, U)
petrol Nov 89(T), Feb 90(U) ♦
push Nov 91(T,D)

Ovens

combination convection/microwave Aug 89(T,D)
electric wall Mar 90(T,D), Jun 93(T,D)
microwave Nov 89(T,D), Jun 90(T,D),
Jul 91(T,D), Nov 91(L),
Jun 92(T,D), Aug 92* ♦

Refrigerators

bar Sep 91(T,D)
2-door 200-299 L Mar 92(T)
2-door 300-350 L Sep 92(T,D)
2-door 350-400 L Sep 90(T)
2-door frost-free 350-400 L May 93(T)
2-door frost-free 450-525 L Jan 90(T)

Sewing machines

computerised Jun 91(T,D), Sep 91(T,U)
basic Apr 93(T,D)

Stoves, gas

Apr 91(T,D)

Vacuum cleaners

expensive Feb 91(T,D), Apr 91*
mid-price range Aug 91(T,D), Sep 91(U) ♦
shampoo May 93(T,D)

Video equipment

camcorders Oct 90(T,D)
TV, pocket-sized May 93(T)
TVs, portable May 90(T,D), Apr 93(T,D)
TVs, medium-sized
Dec 89(T), Jun 91(T,D), Jul 92(T,D)
TV reception Mar 91(F), May 91*
TV servicing Mar 91(S)
video editor Oct 90(T)
video recorders Apr 90(T,D),
Oct 91(T,D), Mar 93(T)

Washing machines

Nov 89(T,D), Jan 91(T),
Jun 91*, Nov 91(T,D), Feb 92*,
Jan 93(T,D), Mar 93* ♦

Water heaters

♦

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